

Final Examinations

on Geometry



Model Examinations of the School Book



on Geometry

Model 1

Answer the following questions :

1 Complete the following :

- 1 The longest side in the right-angled triangle is
- 2 If the lengths of two sides in a triangle are 2 cm. and 7 cm. , then :
..... < the length of the third side <
- 3 If the measures of two angles in a triangle are different , then the greater in measure of them is opposite to
- 4 If the length of the median drawn from a vertex of a triangle equals half the opposite side to this vertex in length , then
- 5 If the measure of an angle in the isosceles triangle equals 60° , then the triangle is

2 Choose the correct answer from those given :

1 In the opposite figure :

1 $\triangle ABC$ is equilateral, then $m(\angle ACD) = \dots$

(a) 45° (b) 60°
 (c) 120° (d) 135°

2 In $\triangle ABC$ which is right-angled at B, if $AC = 20\text{ cm.}$, then the length of the median of the triangle drawn from B equals \dots

(a) 10 cm. (b) 8 cm. (c) 6 cm. (d) 5 cm.

3 XYZ is a triangle in which : $m(\angle Z) = 70^\circ$ and $m(\angle Y) = 60^\circ$, then $YZ \dots XY$

(a) $>$ (b) $<$ (c) $=$ (d) twice

4 The lengths which can be lengths of sides of a triangle are \dots

(a) $0, 3, 5$ (b) $3, 3, 5$ (c) $3, 3, 6$ (d) $3, 3, 7$

5 The triangle in which the measures of two angles of it are 42° and 69° is \dots

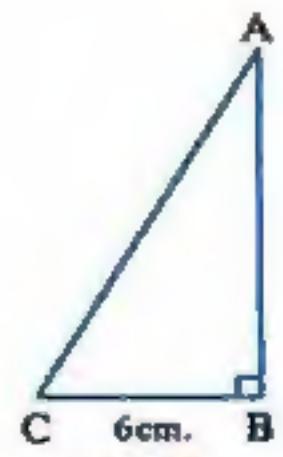
(a) an isosceles triangle. (b) an equilateral triangle.
 (c) a scalene triangle. (d) a right-angled triangle.

8 In the opposite figure :

$$m(\angle C) = 2m(\angle A)$$

, BC \approx 6 cm.

, then $AC = \dots \text{ cm.}$



Geometry

3 [a] Complete : ABC is a triangle in which $AB > AC$, then $m(\angle C) \dots m(\angle B)$

[b] In the opposite figure :

$$m(\angle A) = 50^\circ, AB = AC$$

and $\triangle DBC$ is equilateral

Find : $m(\angle ABD)$

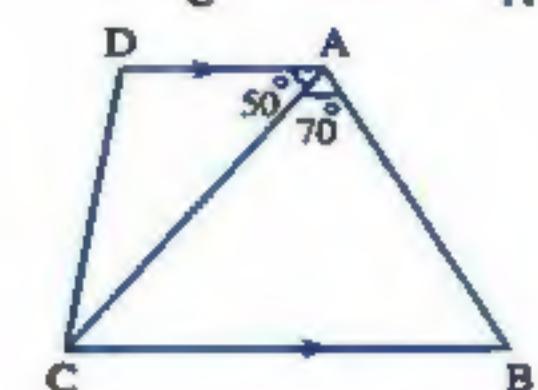
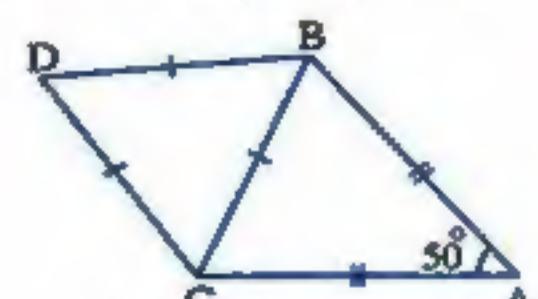
[c] In the opposite figure :

$$\overline{AD} \parallel \overline{BC}$$

$$, m(\angle BAC) = 70^\circ$$

$$\text{and } m(\angle DAC) = 50^\circ$$

Prove that : $BC > AC$



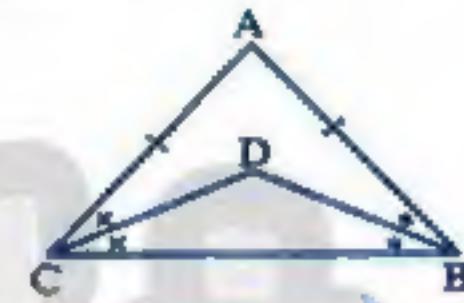
4 [a] Prove that : The two base angles of the isosceles triangle are congruent.

[b] In the opposite figure :

$$AB = AC, \overline{BD} \text{ bisects } \angle B$$

and \overline{CD} bisects $\angle C$

Prove that : $\triangle DBC$ is isosceles.



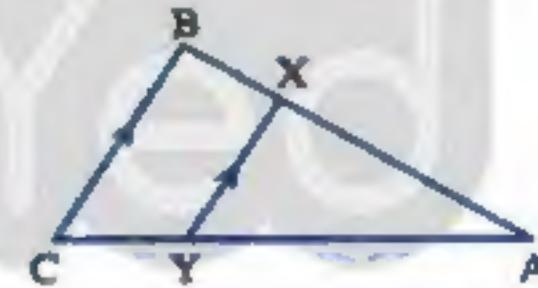
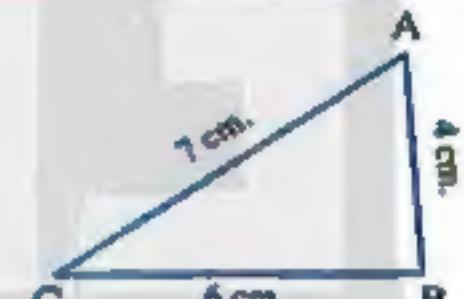
5 [a] In the opposite figure :

Arrange the angles
of $\triangle ABC$ descendingly
due to their measures

[b] In the opposite figure :

$$AB > BC, \overline{XY} \parallel \overline{BC}$$

Prove that : $AX > XY$



Model 2

Answer the following questions :

1 Choose the correct answer from those given :

1 The triangle which has three axes of symmetry is triangle.

(a) scalene (b) isosceles (c) right-angled (d) equilateral

2 The sum of lengths of two sides in a triangle is the length of the third side.

(a) greater than (b) smaller than (c) equals to (d) twice

3 If the lengths of two sides in an isosceles triangle are 8 cm. and 4 cm. , then the length of the third side is cm.

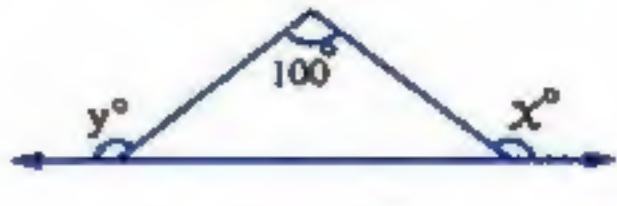
(a) 4 (b) 8 (c) 3 (d) 12

Final Examinations

4 In $\triangle ABC$ if $m(\angle B) = 130^\circ$, then the longest side of it is
 (a) \overline{BC} (b) \overline{AC} (c) \overline{AB} (d) its median.

5 $\triangle XYZ$ is an isosceles triangle in which : $m(\angle X) = 100^\circ$, then $m(\angle Y) = \dots$
 (a) 100° (b) 80° (c) 60° (d) 40°

6 In the opposite figure :
 $X + y = \dots$
 (a) 100° (b) 140° (c) 180° (d) 280°



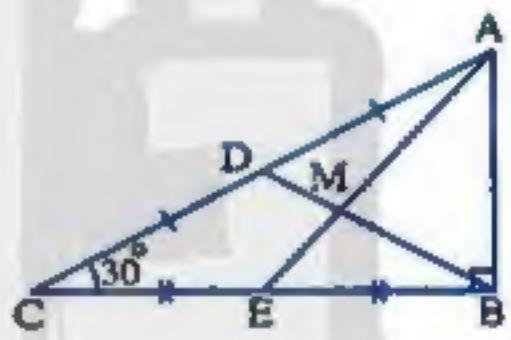
2 Complete the following :

1 If the measure of an angle in a right-angled triangle is 45° , then the triangle is
 2 The length of any side in a triangle the sum of lengths of the two other sides.
 3 If $\overline{AB} = \overline{XY}$, then $AB = \dots$
 4 In $\triangle ABC$, if $m(\angle A) = 30^\circ$ and $m(\angle B) = 90^\circ$, then $BC = \dots AC$
 5 The axis of symmetry of a line segment is the straight line which at its midpoint.

3 [a] In $\triangle ABC$: $AB = 7$ cm., $BC = 5$ cm. and $AC = 6$ cm.
 Arrange its angles ascendingly due to their measures.

[b] In the opposite figure :

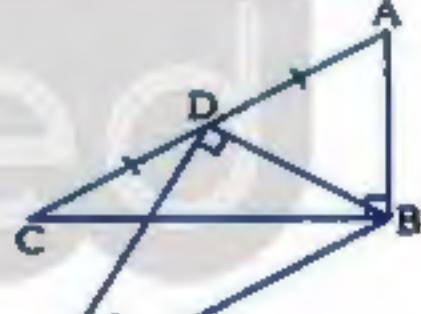
$\triangle ABC$ is right-angled at B
 , $m(\angle C) = 30^\circ$, D is the midpoint of \overline{AC}
 , E is the midpoint of \overline{BC} , $AC = 9$ cm.
 Find the length of each of : \overline{BD} , \overline{BM} and \overline{AB}



4 [a] In the opposite figure :

$m(\angle ABC) = m(\angle BDE) = 90^\circ$
 , $m(\angle E) = 30^\circ$
 , D is the midpoint of \overline{AC}

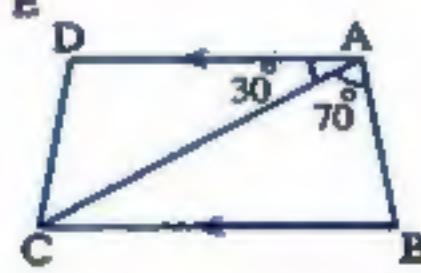
Prove that : $AC = BE$



[b] In the opposite figure :

$\overrightarrow{AD} \parallel \overrightarrow{BC}$, $m(\angle BAC) = 70^\circ$
 , $m(\angle DAC) = 30^\circ$

Prove that : $AC > BC$



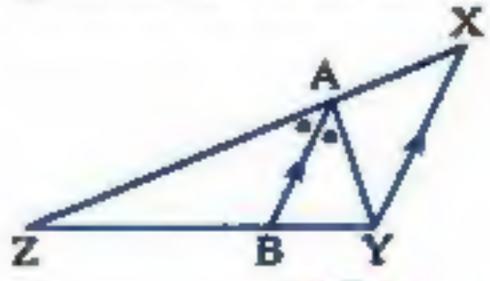
5 [a] Complete :

If the measures of two angles of a triangle are different, then their greater in measure is opposite to

[b] In the opposite figure :

$\overrightarrow{AB} \parallel \overrightarrow{XY}$ and \overrightarrow{AB} bisects $\angle YAZ$

Prove that : $XZ > YZ$



Geometry

Model for the merge students

Answer the following questions :

1 Complete each of the following :

- 1 The point of concurrence of the medians of the triangle divides each median in the ratio : from the base.
- 2 In the right-angled triangle , the length of the median drawn from the vertex of the right angle equals
- 3 The base angles of the isosceles triangle are
- 4 In $\triangle ABC$: $m(\angle B) = 70^\circ$, $m(\angle C) = 50^\circ$, then $AC \dots AB$
- 5 The median of the isosceles triangle from the vertex angle ,

2 Choose the correct answer from those given :

- 1 If ABC is an equilateral triangle , then $m(\angle B) = \dots$
 - (a) 30°
 - (b) 60°
 - (c) 70°
 - (d) 90°
- 2 The length of the side opposite to the angle of measure 30° in the right-angled triangle equals the length of the hypotenuse.
 - (a) $\frac{1}{2}$
 - (b) $\frac{1}{3}$
 - (c) $\frac{1}{4}$
 - (d) 2
- 3 If the measure of the vertex angle of an isosceles triangle is 80° , then the measure of one of the base angles equals
 - (a) 60°
 - (b) 40°
 - (c) 30°
 - (d) 50°
- 4 The number of axes of symmetry of the isosceles triangle is
 - (a) 1
 - (b) 2
 - (c) 3
 - (d) zero
- 5 In $\triangle ABC$: $m(\angle A) = 50^\circ$, $m(\angle B) = 60^\circ$, then the longest side is
 - (a) \overline{AB}
 - (b) \overline{BC}
 - (c) \overline{AC}

3 In the opposite figure , complete :

$\triangle ABC$ is a right-angled triangle at B , $m(\angle C) = 30^\circ$, $AB = 5 \text{ cm}$.

Find : The length of \overline{AC}

$\therefore m(\angle B) = \dots$, $m(\angle C) = \dots$

$\therefore AB = \frac{1}{2} \times \dots$ $\therefore AC = \dots \text{ cm}$.



4 [a] In $\triangle ABC$: $m(\angle A) = 40^\circ$, $m(\angle B) = 75^\circ$, $m(\angle C) = 65^\circ$

Arrange the lengths of the sides of the triangle descendingly.

The order is : , ,

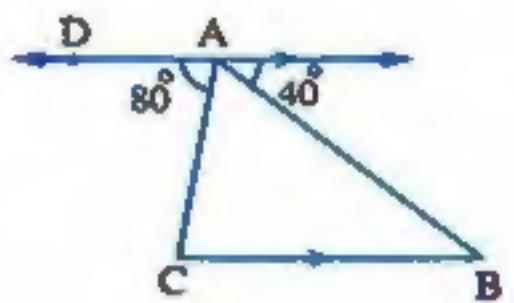
[b] In the opposite figure :

$$\overrightarrow{AD} \parallel \overrightarrow{BC}$$

Complete :

1 $m(\angle B) = \dots \dots \dots^\circ$

2 The side is the longest side of $\triangle ABC$



5 In the opposite figure :

$AB = AC = CD = AD = 10 \text{ cm.}$

, $m(\angle BAC) = 70^\circ$

Put (✓) or (✗) :

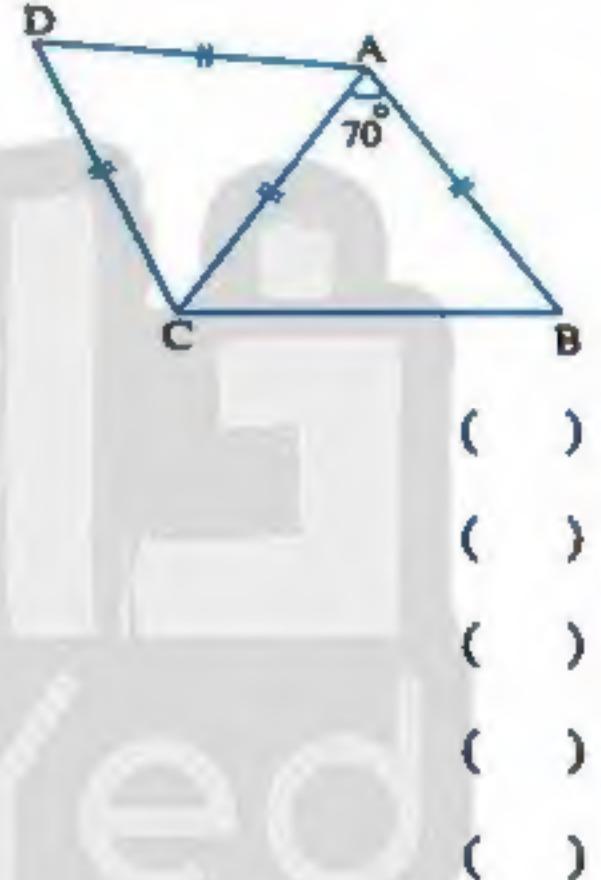
1 $m(\angle B) = 55^\circ$ ()

2 $m(\angle D) = 70^\circ$ ()

3 $m(\angle DCB) = 120^\circ$ ()

4 $AB + AD = 20 \text{ cm.}$ ()

5 $AB + BC = BC + CD$ ()



Some Schools Examinations



on Geometry

1

Cairo Governorate

Centre Cairo Educational Zone
Saint Joseph College Khoronfisch

Answer the following questions :

1 Choose the correct answer from the given ones :

1 In $\triangle ABC$, if $AB = 6 \text{ cm.}$ and $AC = 7 \text{ cm.}$, then $BC \in \dots$

(a) $[6, 13]$ (b) $[6, 7]$ (c) $[1, 13]$ (d) $[1, 7]$

2 The point of intersection of the medians of the triangle divides each of them in the ratio of from the vertex.

(a) $1 : 2$ (b) $1 : 3$ (c) $2 : 1$ (d) $2 : 3$

3 The measure of any exterior angle of the equilateral triangle equals°

(a) 60 (b) 100 (c) 120 (d) 150

4 In $\triangle ABC$, if \overline{AD} is a median, M is the point of intersection of its medians, then $AM = \dots AD$

(a) $\frac{1}{2}$ (b) 2 (c) $\frac{2}{3}$ (d) $\frac{3}{2}$

5 $\triangle XYZ$ is an isosceles triangle in which $m(\angle X) = 110^\circ$, then $m(\angle Y) = \dots^\circ$

(a) 110 (b) 35 (c) 60 (d) 45

6 In $\triangle ABC$, if $\overline{AB} \perp \overline{BC}$ and $AB = BC$, then $m(\angle A) = \dots^\circ$

(a) 30 (b) 45 (c) 60 (d) 90

2 Complete the following :

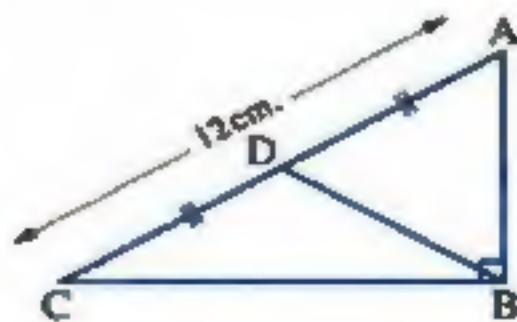
1 The number of axes of symmetry of the equilateral triangle equals

2 The base angles in an isosceles triangle are

3 The longest side in the right-angled triangle is

4 The bisector of the vertex angle of the isosceles triangle

5 In the opposite figure :

 $AC = 12 \text{ cm.}$, then $BD = \dots \text{ cm.}$ 

3 [a] In $\triangle ABC$, if $m(\angle A) = (6x)^\circ$, $m(\angle B) = (4x - 9)^\circ$
and $m(\angle C) = 3(x - 2)^\circ$

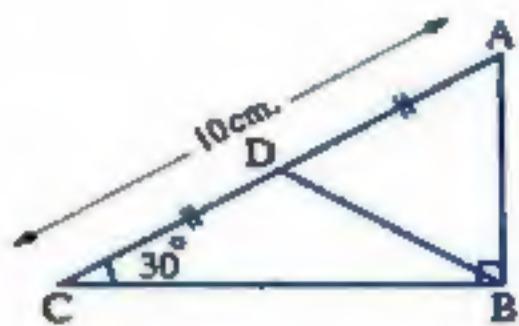
Arrange the side lengths of $\triangle ABC$ ascendingly.

[b] In the opposite figure :

$$m(\angle ABC) = 90^\circ, m(\angle C) = 30^\circ$$

, $AD = DC$ and $AC = 10 \text{ cm}$.

Find : The perimeter of $\triangle ABD$



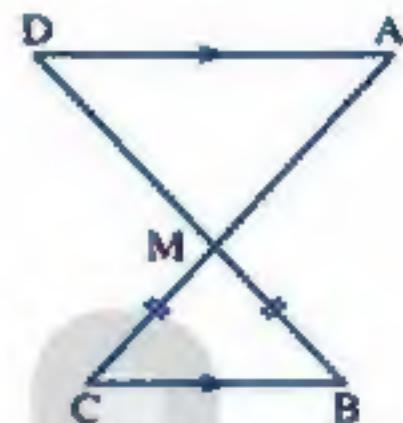
4 [a] In the opposite figure :

If $\overline{AC} \cap \overline{BD} = \{M\}$

, $AD \parallel BC$ and $MB = MC$

, prove that :

$\triangle MAD$ is isosceles.

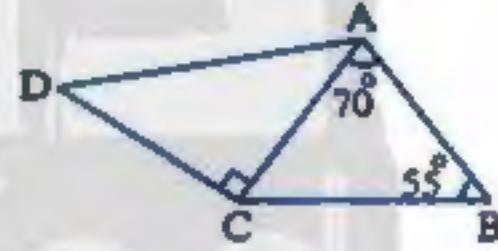


[b] In the opposite figure :

$$m(\angle BAC) = 70^\circ, m(\angle B) = 55^\circ$$

and $m(\angle ACD) = 90^\circ$

Prove that : $AD > AB$



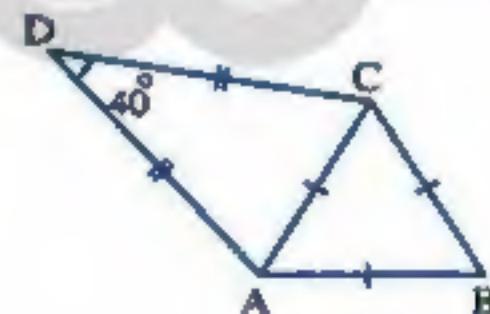
5 [a] In the opposite figure :

$$m(\angle D) = 40^\circ$$

, $DA = DC$

and $\triangle ABC$ is an equilateral triangle.

Find : $m(\angle DCB)$

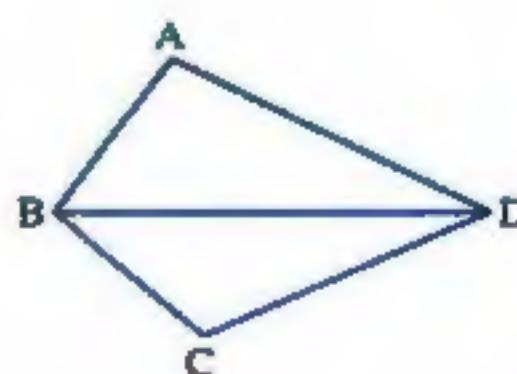


[b] In the opposite figure :

$AB < AD$ and $BC < CD$

Prove that :

$m(\angle ABC) > m(\angle ADC)$



Geometry

2

Cairo Governorate

Hedak El-Kobba Educational Zone



Answer the following questions :

1 Complete :

- 1 The median of an isosceles triangle from the vertex angle bisects and is perpendicular to
- 2 The measure of the exterior angle at any vertex of the equilateral triangle is°
- 3 The base angles of the isosceles triangle are
- 4 ABC is a triangle in which $AB = 4 \text{ cm.}$, $BC = 6 \text{ cm.}$, then $AC \in].....,$
- 5 The longest side in the right-angled triangle is

2 Choose the correct answer :

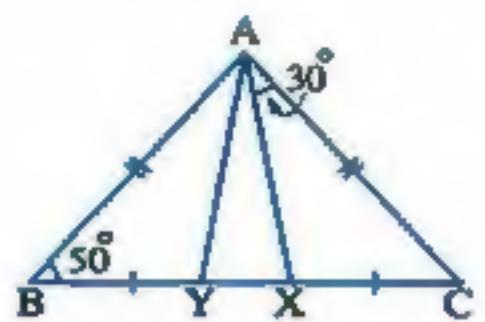
- 1 In $\triangle ABC$, if $AC = 4 \text{ cm.}$, $BC = 3 \text{ cm.}$, then $m(\angle B) \dots m(\angle A)$
 - (a) >
 - (b) <
 - (c) =
 - (d) \leq
- 2 The length of the side opposite to the angle of measure 30° in the right-angled triangle equals the length of the hypotenuse.
 - (a) half
 - (b) twice
 - (c) third
 - (d) quarter
- 3 In $\triangle ABC$, if $m(\angle A) = 100^\circ$ and $AB = AC$, then $m(\angle ABC) =$
 - (a) 80°
 - (b) 60°
 - (c) 40°
 - (d) 30°
- 4 The point of intersection of the medians of the triangle divides each of them in the ratio from the base.
 - (a) $1 : 3$
 - (b) $3 : 1$
 - (c) $1 : 2$
 - (d) $2 : 1$
- 5 If $\triangle ABD$ is obtuse-angled at B and C is the midpoint of \overline{BD} , then the longest side is
 - (a) \overline{AB}
 - (b) \overline{AC}
 - (c) \overline{AD}
 - (d) \overline{BD}
- 6 The triangle whose side lengths are 2 cm. , $(x + 3) \text{ cm.}$ and 5 cm. becomes an isosceles triangle when $x =$ cm.
 - (a) 1
 - (b) 2
 - (c) 3
 - (d) 4

Final Examinations

3 [a] In the opposite figure :

ABC is a triangle, $AB = AC$, $XC = YB$, $m(\angle B) = 50^\circ$, $m(\angle CAX) = 30^\circ$ 1 Prove that : $\triangle AXY$ is an isosceles triangle.2 Find : $m(\angle AYB)$

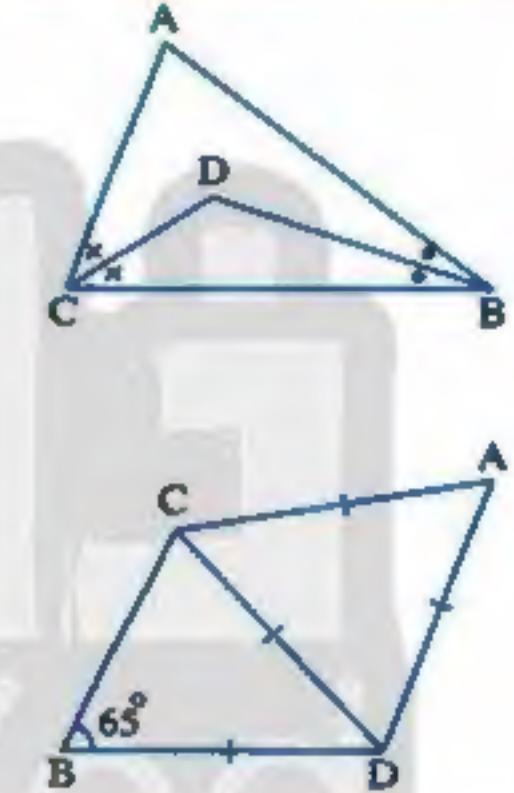
[b] In the opposite figure :

 $\overline{BD} \cap \overline{AC} = \{M\}$, $AB = AD$ and $BC = DC$ Prove that : M is the midpoint of \overline{BD} 

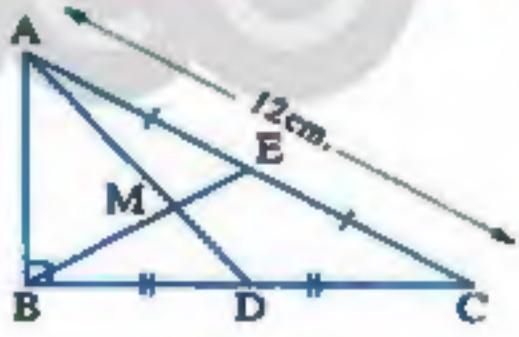
4 [a] In the opposite figure :

ABC is a triangle in which $AB > AC$, \overline{BD} bisects $\angle ABC$, \overline{CD} bisects $\angle ACB$ Prove that : $BD > CD$

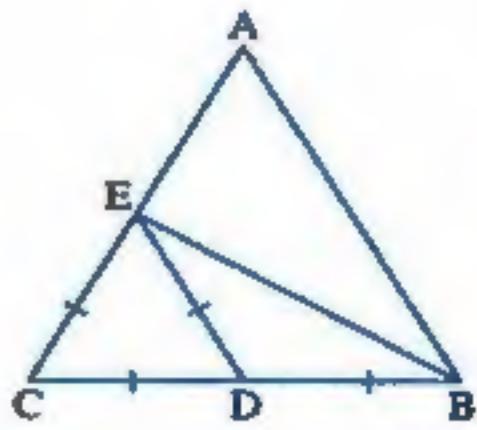
[b] In the opposite figure :

 $AD = DC = AC = BD$, $m(\angle B) = 65^\circ$ Find with proof : $m(\angle BDA)$ 

5 [a] In the opposite figure :

 $\triangle ABC$ is right-angled at B, E and D are the midpoints of \overline{AC} and \overline{BC} respectively, $AC = 12$ cm.Find the length of each of : \overline{BE} and \overline{ME} 

[b] In the opposite figure :

ABC is a triangle, $D \in \overline{BC}$ and $E \in \overline{AC}$ such that $BD = CD = CE = DE$ Prove that : 1 $BC > BE$ 2 $AB + BD > AE$ 

Geometry

3

Cairo Governorate

Rod El-Farag Educational Zone
S.T. Mary's School

Answer the following questions :

1 Choose the correct answer from the given ones :

1 In the triangle XYZ , if $m(\angle Z) = 70^\circ$ and $m(\angle Y) = 60^\circ$, then $YZ \dots \dots \dots XY$
 (a) $>$ (b) $=$ (c) $<$ (d) twice

2 The measure of the exterior angle of the equilateral triangle equals
 (a) 45° (b) 60° (c) 90° (d) 120°

3 The intersection point of the medians of a triangle divides each of them from the direction of the base in the ratio
 (a) $1 : 2$ (b) $2 : 1$ (c) $1 : 3$ (d) $2 : 3$

4 ABCD is a rectangle , M is the point of intersection of its diagonals , if the length of the diagonal is 6 cm. , then the length of the median \overline{AM} equals cm.
 (a) 3 (b) 6 (c) 9 (d) 12

5 ABC is an isosceles triangle where $AB = AC$ and $m(\angle A) = 100^\circ$, then $m(\angle B) = \dots \dots \dots$
 (a) 60° (b) 50° (c) 40° (d) 30°

6 The number of axes of symmetry of the isosceles triangle equals
 (a) 0 (b) 1 (c) 2 (d) 3

2 Complete :

1 If the measures of two angles of a triangle are different , then the greater in measure is opposite to

2 The bisector of the vertex angle of the isosceles triangle ,

3 The base angles of the isosceles triangle are

4 In any triangle , the sum of the lengths of any two sides the length of the third side.

5 $\triangle ABC$ is right-angled at B , $m(\angle A) = 30^\circ$, $AC = 10$ cm. , then $CB = \dots \dots \dots$ cm.

6 [a] ABC is a triangle in which $AB = AC$, \overline{BD} bisects $\angle ABC$, \overline{CD} bisects $\angle ACB$, $\overline{BD} \cap \overline{CD} = \{D\}$ Prove that : $\triangle DBC$ is an isosceles triangle.

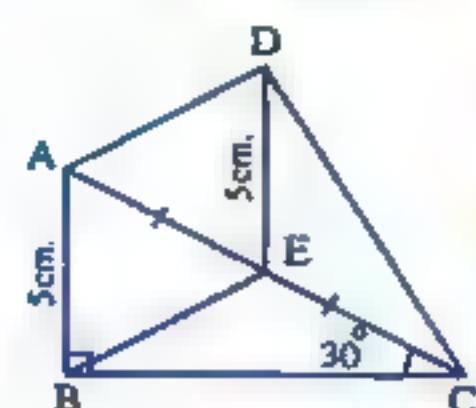
[b] In the opposite figure :

ABC is a right-angled triangle at B

, $m(\angle ACB) = 30^\circ$, AB = 5 cm.

, E is the midpoint of \overline{AC} , if DE = 5 cm.

, prove that : $m(\angle ADC) = 90^\circ$



4 [a] In the opposite figure :

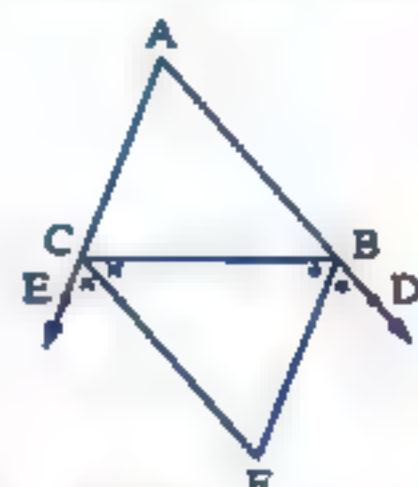
ABC is a triangle in which $AB > AC$, $D \in \overline{AB}$, $E \in \overline{AC}$

, \overrightarrow{BF} bisects $\angle DBC$, \overrightarrow{CF} bisects $\angle BCE$

, $\overrightarrow{BF} \cap \overrightarrow{CF} = \{F\}$

Prove that : 1 $m(\angle FBC) > m(\angle BCF)$

2 $CF > BF$

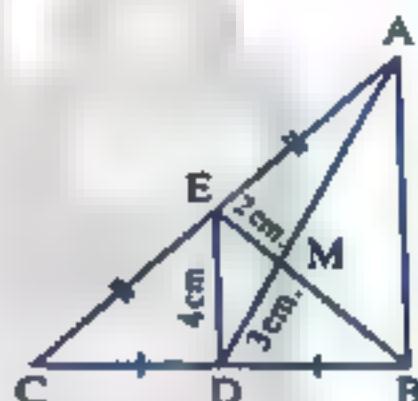


[b] In the opposite figure :

ABC is a triangle in which $ME = 2$ cm. , $MD = 3$ cm.

, $DE = 4$ cm. , D and E are the midpoints of \overline{BC} , \overline{AC} respectively

Find : The perimeter of $\triangle MAB$

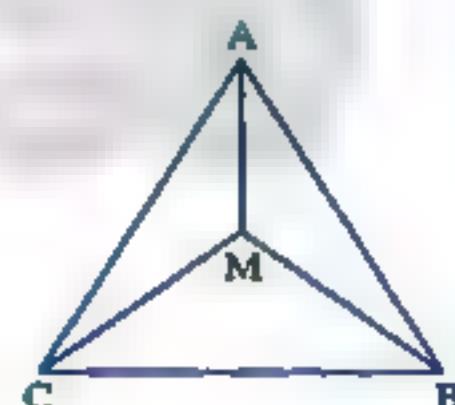


5 [a] In the opposite figure :

ABC is a triangle in which

M is a point inside it.

Prove that : $MA + MB + MC > \frac{1}{2}$ the perimeter of $\triangle ABC$



[b] In the opposite figure :

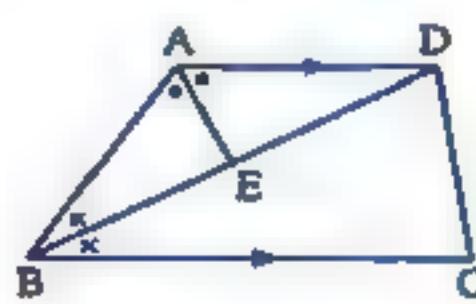
ABCD is a quadrilateral in which $\overline{AD} \parallel \overline{BC}$

, \overrightarrow{BD} bisects $\angle ABC$, \overrightarrow{AE} bisects $\angle BAD$

Prove that : 1 $AB = AD$

2 $\overline{AE} \perp \overline{BD}$

3 $BE = ED$



Geometry

4

Giza Governorate

Boiling El Dakrour Directorate of Education
Dar El-Hanan Lang. Sch. for Girls

Answer the following questions :

1 Choose the correct answer :

[1] The number of axes of symmetry of the isosceles triangle equals
 (a) 3 (b) 2 (c) 1 (d) 0

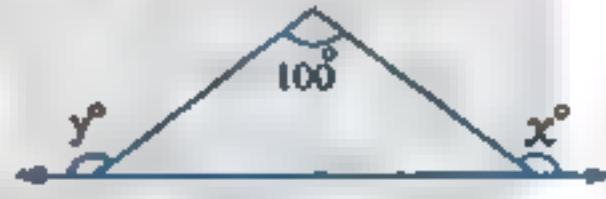
[2] The point of intersection of the medians of the triangle divides each of them in the ratio of from the base.
 (a) 2 : 1 (b) 3 : 1 (c) 3 : 2 (d) 1 : 2

[3] $\triangle XYZ$ is right-angled at Y, then $XZ \dots YZ$
 (a) $>$ (b) $<$ (c) $=$ (d) \leq

[4] If 10 cm., 5 cm. and X cm. are side lengths of an isosceles triangle, then $X =$
 (a) 10 (b) 5 (c) 15 (d) 4

[5] The measure of the exterior angle of an equilateral triangle equals
 (a) 30 (b) 60 (c) 90 (d) 120

[6] In the opposite figure :
 $x + y \approx \dots$
 (a) 100° (b) 140° (c) 180° (d) 280°



2 Complete the following :

[1] In $\triangle ABC$, if $m(\angle B) = 70^\circ$, $m(\angle C) = 50^\circ$, then $AC \dots AB$

[2] In $\triangle ABC$, if $m(\angle A) = m(\angle B) + m(\angle C)$, then the longest side is

[3] The axis of symmetry of a line segment is the straight line which from its midpoint.

[4] ABC is a triangle in which $AB = 4$ cm., $CB = 7$ cm., then $AC \in] \dots , \dots [$

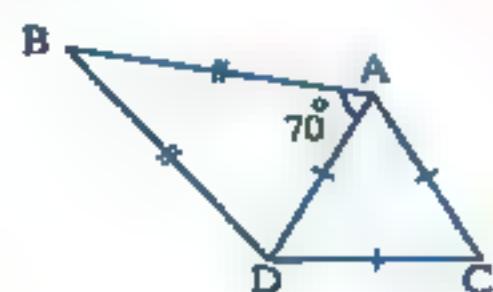
[5] If \overline{AD} is a median in $\triangle ABC$, and M is the point of intersection of its medians and $AM = 12$ cm., then $AD = \dots$

3 [a] In the opposite figure :

$AB = BD$, $m(\angle BAD) = 70^\circ$

, $\triangle ADC$ is an equilateral triangle.

Find : $m(\angle BDC)$

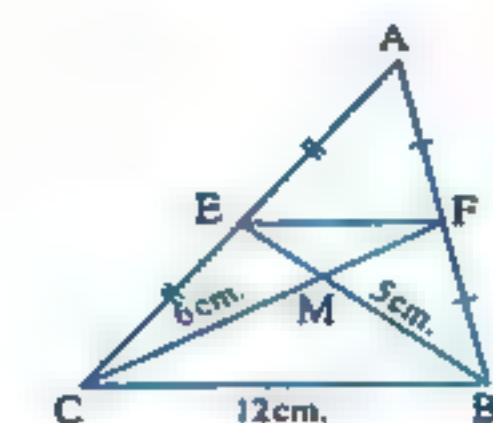


[b] In the opposite figure :

ABC is a triangle, F and E are the midpoints of \overline{AB} and \overline{AC} respectively.

If $BM = 5$ cm., $CM = 6$ cm., $BC = 12$ cm.

, then find : The perimeter of $\triangle MEF$



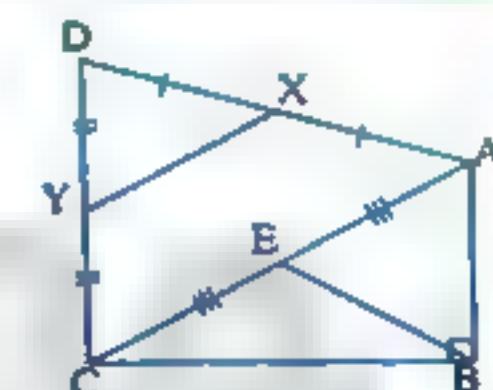
4 [a] In the opposite figure :

$m(\angle ABC) = 90^\circ$

, E is the midpoint of \overline{AC}

and X , Y are the midpoints of \overline{DA} and \overline{DC}

Prove that : $XY = BE$



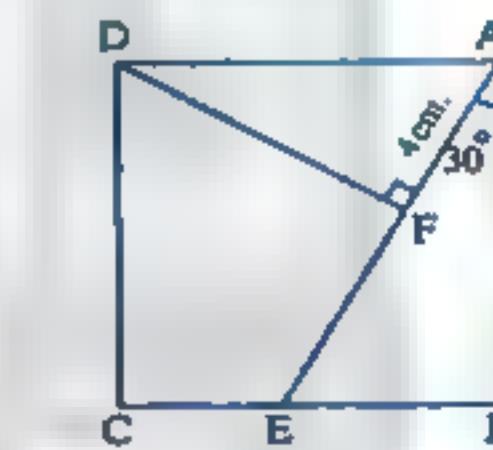
[b] In the opposite figure :

$ABCD$ is a square, $E \in \overline{BC}$

where $m(\angle BAE) = 30^\circ$ and $\overline{DF} \perp \overline{AE}$

, if $AF = 4$ cm.

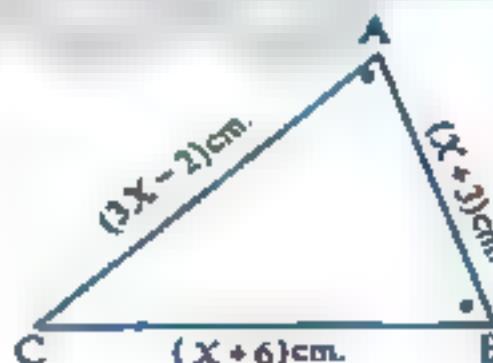
, calculate : The area of the square ABCD



5 [a] In the opposite figure :

$m(\angle A) = m(\angle B)$

Find : The perimeter of $\triangle ABC$



[b] In the opposite figure :

ABC is a triangle in which :

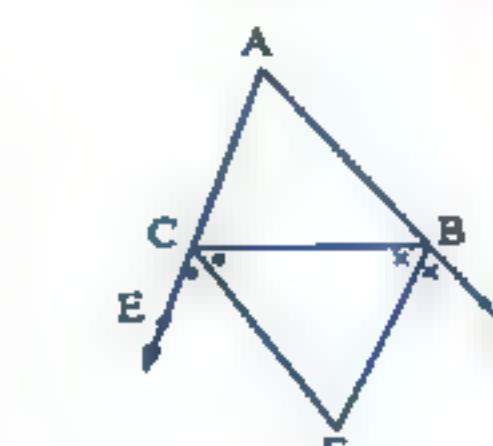
$AB > AC$, $D \in \overline{AB}$, $E \in \overline{AC}$

, \overrightarrow{BF} bisects $\angle DBC$, \overrightarrow{CF} bisects $\angle BCE$

, $\overrightarrow{BF} \cap \overrightarrow{CF} = \{F\}$

Prove that : 1) $m(\angle FBC) > m(\angle BCF)$

2) $CF > BF$



Geometry

5

Giza Governorate

6th October Directorate
Om El-Maemneen Lang. School

Answer the following questions :

1 Choose the correct answer :

1 If $\triangle ABC$ is an isosceles triangle, $m(\angle A) = 60^\circ$, $AB = 4\text{ cm}$, then its perimeter = cm.
 (a) 4 (b) 12 (c) 6 (d) 9

2 $\triangle XYZ$ is a triangle in which $m(\angle Z) = 70^\circ$, $m(\angle Y) = 60^\circ$, then YZ XY
 (a) $>$ (b) $<$ (c) $=$ (d) \geq

3 In $\triangle ABC$, if $m(\angle B) = 90^\circ$, then the longest side is
 (a) \overline{BC} (b) \overline{AB} (c) \overline{AC} (d) its median.

4 A triangle has one axis of symmetry, the lengths of two sides are 4 cm. and 8 cm., then the length of the third side is cm.
 (a) 3 (b) 6 (c) 4 (d) 8

5 The point of intersection of the medians of the triangle divides each of the medians in the ratio from the base.
 (a) 2 : 1 (b) 3 : 2 (c) 2 : 4 (d) 3 : 4

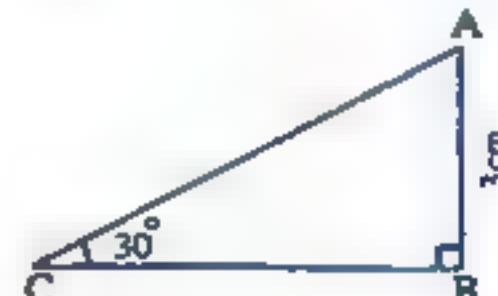
6 If the length of any side of a triangle = $\frac{1}{3}$ the perimeter of the triangle, then the number of axes of symmetry of the triangle equals
 (a) 3 (b) 1 (c) 2 (d) zero

2 Complete :

1 The bisector of the vertex angle of the isosceles triangle and

2 In the opposite figure :

The length of \overline{AC} =



3 In $\triangle ABC$, $m(\angle A) = m(\angle B) = m(\angle C)$, then the measure of the exterior angle equals

4 If the lengths of two sides of a triangle are 4 cm., 7 cm., then the length of the third side belongs to] , [

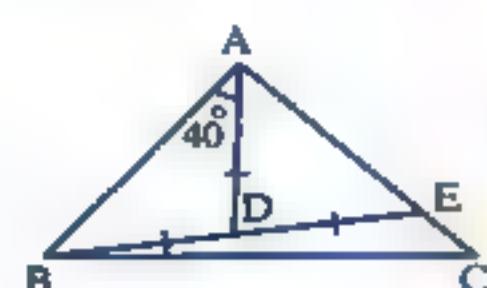
5 If $\angle X$ and $\angle Y$ are two supplementary angles, $\angle X \equiv \angle Y$, then $m(\angle X) =^\circ$

3 [a] In the opposite figure :

$AD = BD = ED$, $m(\angle DAB) = 40^\circ$

Prove that :

1 $AD < AB$ 2 $BC > AC$

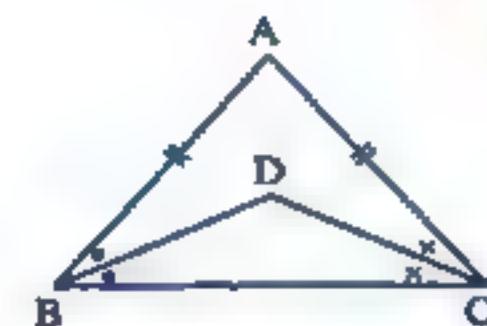


[b] In the opposite figure :

$AB = AC$, \overline{BD} bisects $\angle ABC$

and \overline{CD} bisects $\angle ACB$

Prove that : $\triangle DBC$ is an isosceles triangle.



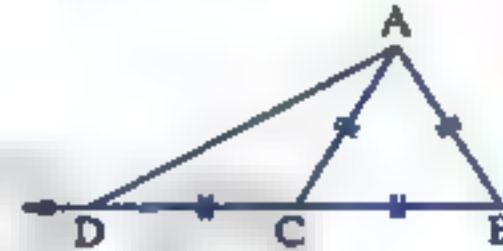
4 [a] ABC is a triangle in which $m(\angle A) = (6x)^\circ$, $m(\angle B) = (4x - 9)^\circ$

, $m(\angle C) = 3(x - 2)^\circ$ Arrange the lengths of the sides of the triangle ascendingly.

[b] In the opposite figure :

$AB = AC = CB = CD$

Prove that : $\overline{AB} \perp \overline{AD}$



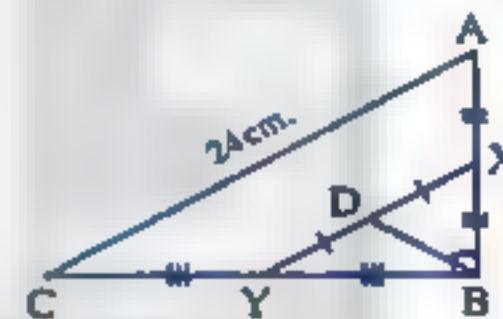
5 [a] In the opposite figure :

$m(\angle ABC) = 90^\circ$, X is the midpoint of \overline{AB}

, Y is the midpoint of \overline{BC}

, D is the midpoint of \overline{XY} , $AC = 24$ cm.

Find : The length of \overline{BD}



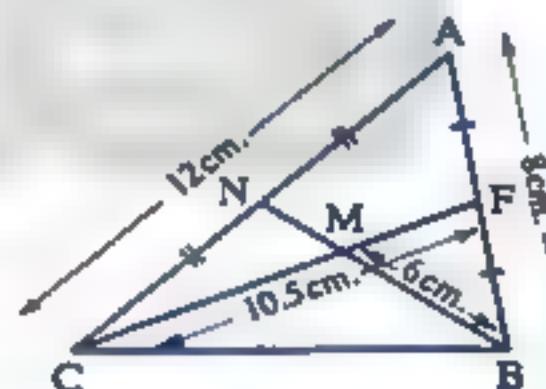
[b] In the opposite figure :

F and N are the midpoints of \overline{AB} and \overline{AC} respectively

, $AB = 8$ cm. , $AC = 12$ cm. , $BM = 6$ cm.

, $CF = 10.5$ cm.

Find : The perimeter of the figure AFMN



6 Alexandria Governorate

Middle Educational Zone
Math Supervision



Answer the following questions :

1 Complete each of the following :

1 If $m(\angle A) = 65^\circ$, then $m(\text{complementary } \angle A) = \dots^\circ$

2 In $\triangle ABC$, $m(\angle A) = 50^\circ$, $m(\angle C) = 80^\circ$, then $CB = \dots$

Geometry

3 In the opposite figure :

$$x = \dots \text{ } ^\circ$$



4 The number of axes of symmetry for the rectangle equals

5 In $\triangle ABC$, $m(\angle B) = 70^\circ$, $m(\angle C) = 45^\circ$, then $BC \dots AC$

6 The medians of the triangle are

2 Choose the correct answer :

1 The sum of lengths of two sides in a triangle is the length of the third side.

(a) $>$ (b) $<$ (c) $=$ (d) twice

2 The triangle which has no axis of symmetry is

(a) scalene. (b) isosceles. (c) equilateral. (d) right-angled.

3 The numbers which can not be side lengths of a triangle are

(a) 3, 3, 3 (b) 3, 3, 4 (c) 3, 3, 5 (d) 3, 3, 6

4 \overline{BE} is a median in $\triangle ABC$, M is the point of concurrence of the mediansIf $BM = 6 \text{ cm.}$, then $ME = \dots \text{ cm.}$

(a) 2 (b) 3 (c) 4 (d) 9

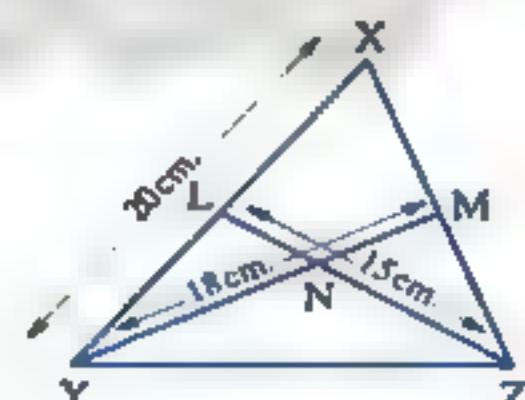
5 The angle whose measure is 180° is called angle.

(a) an acute (b) an obtuse (c) a straight (d) a reflex

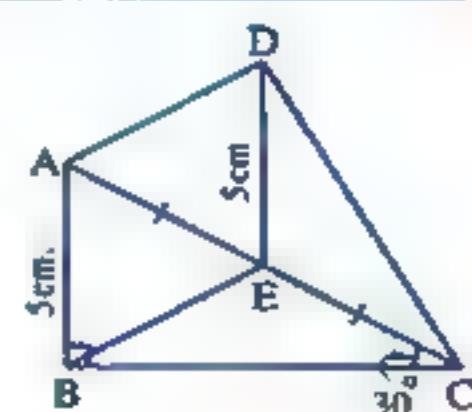
3 [a] $\triangle ABC$ is right-angled at B, if $m(\angle A) = 75^\circ$, arrange the lengths of its sides descendingly.

[b] In the opposite figure :

N is the point of concurrence of

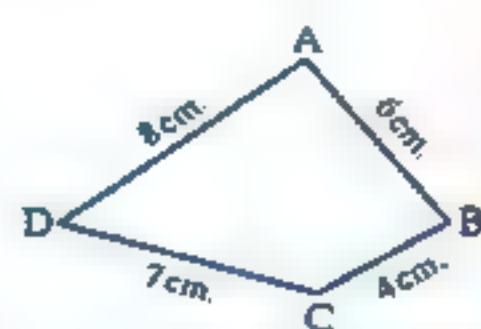
the medians of $\triangle XYZ$, $LZ = 15 \text{ cm.}$, $YM = 18 \text{ cm.}$, $XY = 20 \text{ cm.}$ Find : The perimeter of $\triangle NLY$ 

4 [a] In the opposite figure :

 $m(\angle ABC) = 90^\circ$, E is the midpoint of \overline{AC} , $m(\angle ACB) = 30^\circ$, $AB = DE = 5 \text{ cm.}$ Prove that : $m(\angle ADC) = 90^\circ$ 

[b] In the opposite figure :

Prove that : $m(\angle BCD) > m(\angle BAD)$



5 [a] In the opposite figure :

\overrightarrow{BD} bisects $\angle ABC$

, $\overrightarrow{DE} \parallel \overrightarrow{BC}$

Prove that :

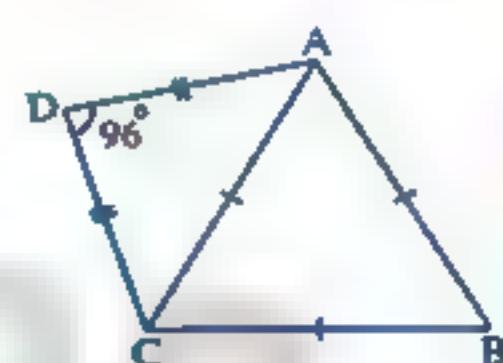
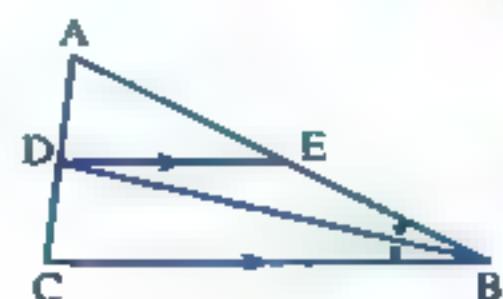
$\triangle EBD$ is an isosceles triangle.

[b] In the opposite figure :

$\triangle ABC$ is equilateral , $DA = DC$

, $m(\angle ADC) = 96^\circ$

Find : $m(\angle DAB)$



Alexandria Governorate

Agemy Educational Zone
Inspector of Maths



Answer the following questions :

1 Choose the correct answer :

- 1 XYZ is a triangle in which $m(\angle Z) = 70^\circ$, $m(\angle Y) = 60^\circ$, then YZ XY
 - (a) >
 - (b) <
 - (c) =
 - (d) twice
- 2 The two diagonals are perpendicular in the
 - (a) rectangle.
 - (b) rhombus.
 - (c) trapezium.
 - (d) triangle.
- 3 The measure of the exterior angle of the equilateral triangle equals°
 - (a) 360
 - (b) 120
 - (c) 60
 - (d) 180
- 4 If the lengths of two sides in an isosceles triangle are 3 cm. , 7 cm. , then the length of the third side is cm.
 - (a) 3
 - (b) 7
 - (c) 10
 - (d) 4
- 5 The point of concurrence of the medians of the triangle divides each median in the ratio from its base.
 - (a) 2 : 1
 - (b) 1 : 3
 - (c) 1 : 4
 - (d) 1 : 2
- 6 If the side length of an equilateral triangle is 10 cm. , then its height equals cm.
 - (a) 5
 - (b) 10
 - (c) $5\sqrt{3}$
 - (d) 30

Geometry

2 Complete :

1 If the isosceles triangle has an angle of measure 45° , then the triangle is angled triangle.

2 The sum of lengths of any two sides of a triangle is the length of the third side.

3 In the opposite figure :

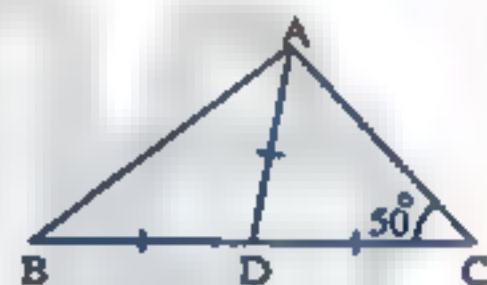
If $m(\angle C) = 2m(\angle A)$
 $, CB = 4 \text{ cm.}$
 $, \text{then } AC = \dots \text{ cm.}$



4 If the two side lengths in a triangle are 4 cm. , 7 cm. , then the length of the third side $\in]\dots, \dots[$

5 In the opposite figure :

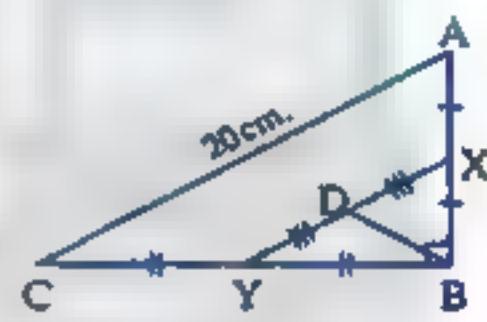
$AD = DC = BD$
 $, m(\angle C) = 50^\circ$
 $, \text{then } m(\angle B) = \dots^\circ$



6 [a] In the opposite figure :

$m(\angle ABC) = 90^\circ$, D is the midpoint of \overline{XY}
 $, X, Y$ are the midpoints of \overline{AB} , \overline{BC} respectively , $AC = 20 \text{ cm.}$

Find : The length of \overline{BD}



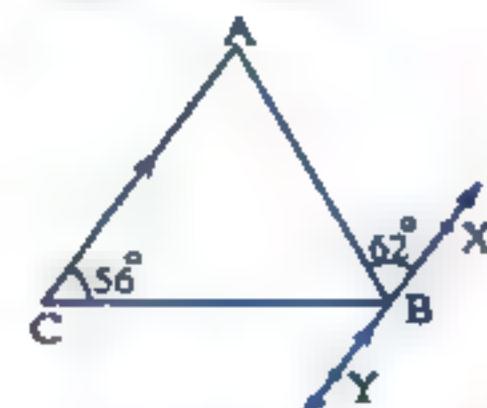
[b] In the opposite figure :

$B \in \overline{XY}$, $\overline{XY} \parallel \overline{AC}$

$, m(\angle ABX) = 62^\circ$

and $m(\angle C) = 56^\circ$

Prove that : $AC = BC$

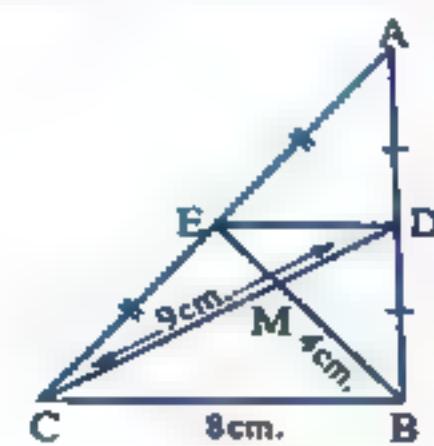


4 [a] In the opposite figure :

D , E are the midpoints of \overline{AB} and \overline{AC} respectively

$, DC = 9 \text{ cm.}$, $MB = 4 \text{ cm.}$ and $BC = 8 \text{ cm.}$

Find : The perimeter of $\triangle DME$



Final Examinations

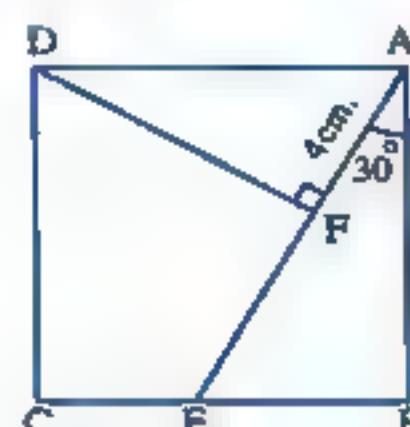
[b] In the opposite figure :

ABCD is a square , $E \in \overline{BC}$

, where $m(\angle BAE) = 30^\circ$ and $\overline{DF} \perp \overline{AE}$

, if $AF = 4 \text{ cm}$.

, calculate : The area of the square ABCD

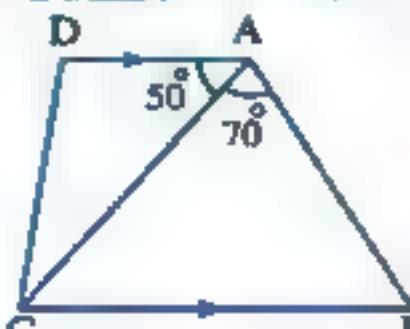


5 [a] In the opposite figure :

$\overline{AD} \parallel \overline{BC}$, $m(\angle CAB) = 70^\circ$

, $m(\angle DAC) = 50^\circ$

Prove that : $BC > AC$

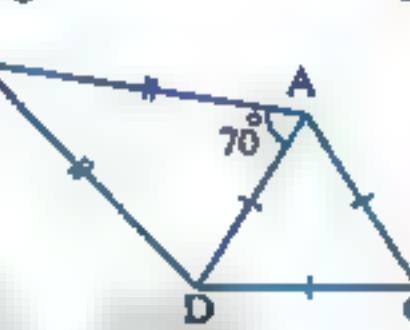


[b] In the opposite figure :

$AB = BD$, $m(\angle BAD) = 70^\circ$

, $\triangle ADC$ is equilateral

Find : $m(\angle BDC)$



8 El-Kalyoubia Governorate

Directorate of Education
Inspection of Mathematics



Answer the following questions :

1 Choose the correct answer :

1 ABC is an equilateral triangle , then $m(\angle A) = \dots \dots \dots^\circ$

(a) 45 (b) 60 (c) 120 (d) 35

2 $\triangle XYZ$ is an isosceles triangle , $m(\angle X) = 100^\circ$, then $m(\angle Y) = \dots \dots \dots^\circ$

(a) 100 (b) 80 (c) 60 (d) 40

3 The length of the side opposite to the angle of measure 30° in the right-angled triangle equals the length of the hypotenuse.

(a) $\frac{1}{2}$ (b) $\frac{2}{3}$ (c) $\frac{1}{4}$ (d) 2

4 The number of axes of symmetry of the isosceles triangle equals

(a) 0 (b) 1 (c) 2 (d) 3

5 If the lengths of two sides of an isosceles triangle are 2 cm. , 5 cm. , then the length of the third side equals cm.

(a) 2 (b) 3 (c) 4 (d) 5

6 In the triangle ABC , if $m(\angle A) = 50^\circ$, $m(\angle B) = 60^\circ$, then the longest side is

(a) \overline{AB} (b) \overline{BC} (c) \overline{AC} (d) 110 cm.

87

هذا العمل خاص بموقع ذاكرولي التعليمي ولا يسمح بتناوله على مواقع أخرى.

Geometry

2 Complete :

- 1 The medians of a triangle are
- 2 The longest side of the right-angled triangle is the
- 3 If $AB = AC$ in the triangle ABC , then ABC is triangle.
- 4 XYZ is a triangle , $m(\angle Z) = 40^\circ$, $m(\angle Y) = 30^\circ$, then XY XZ
- 5 If the lengths of two sides of a triangle are 6 cm. and 9 cm. , then the length of the third side $\in].....,$ [

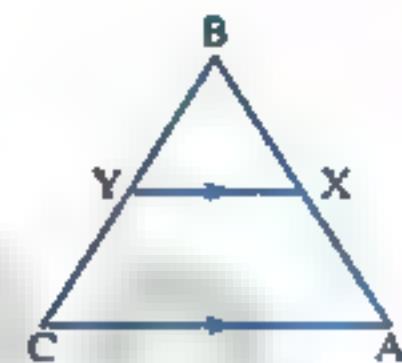
- 3 [a] In $\triangle ABC$, $m(\angle A) = 40^\circ$, $m(\angle B) = 75^\circ$, $m(\angle C) = 65^\circ$

Arrange the lengths of the sides of this triangle descendingly.

[b] In the opposite figure :

$$AB = BC, \overline{XY} \parallel \overline{AC}$$

Prove that : $BY = BX$

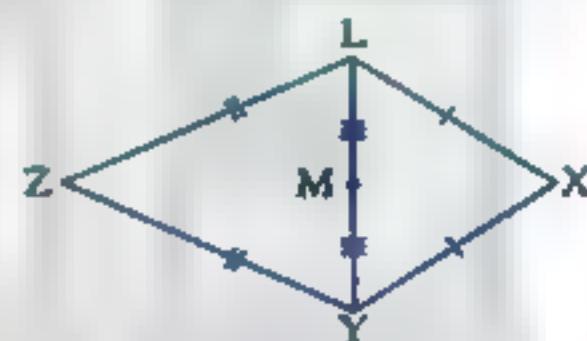


- 4 [a] In the opposite figure :

$$XY = XL, ZY = ZL$$

$$, LM = MY$$

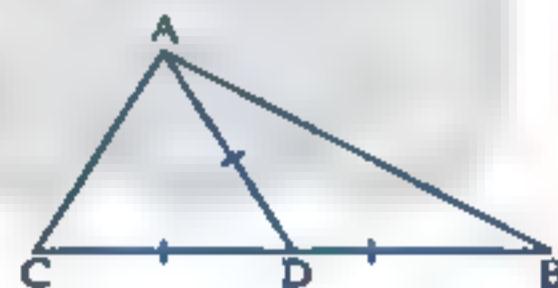
Prove that : X , M , Z are on the same straight line.



[b] In the opposite figure :

$$AB > AC, DB = DC = AD$$

Prove that : $m(\angle BAD) < m(\angle CAD)$



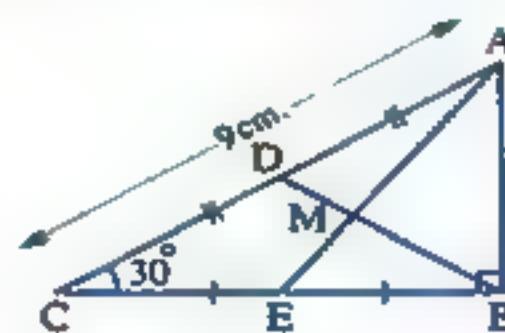
- 5 [a] In the opposite figure :

$\triangle ABC$ is a right-angled triangle at B

, $m(\angle C) = 30^\circ$, D is the midpoint of \overline{AC}

, E is the midpoint of \overline{BC} , $AC = 9 \text{ cm.}$

Find the length of each of : \overline{BD} , \overline{BM} , \overline{AB} , \overline{MD}



[b] ABC is a triangle such that

$$m(\angle A) = (2x)^\circ, m(\angle C) = (x + 40)^\circ, m(\angle B) = (3x - 10)^\circ$$

Prove that : $AB = AC$

9

El-Sharkia Governorate

Zagazig English Language School
for Girls

Answer the following questions :

1 Choose the correct answer :

[1] In $\triangle ABC$, $m(\angle A) = 60^\circ$, $m(\angle C) = 45^\circ$, then
 (a) $AB < AC$ (b) $AB = AC$ (c) $AB > AC$ (d) $AB = BC$

[2] If M is the point of concurrence of the medians of $\triangle ABC$, \overline{AD} is a median, then $MA = \dots \dots \dots$.
 (a) $2AD$ (b) $\frac{2}{3}AD$ (c) $\frac{3}{2}AD$ (d) $\frac{1}{2}MD$

[3] In $\triangle ABC$, $AB = 4$ cm., $BC = 6$ cm., then $AC \in \dots \dots \dots$.
 (a) $[2, 4]$ (b) $[2, 10]$ (c) $[2, 10]$ (d) $[0, 10]$

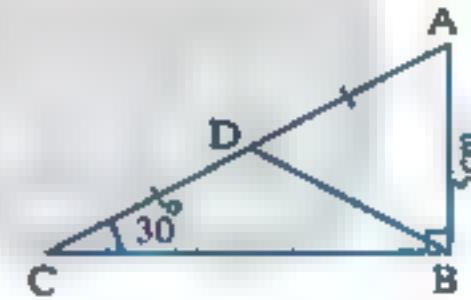
[4] The number of axes of symmetry of the equilateral triangle equals
 (a) zero (b) 1 (c) 2 (d) 3

[5] In $\triangle ABC$, $AB = AC$, $m(\angle B) = x + 30^\circ$, $m(\angle C) = 2x + 5^\circ$, then $x = \dots \dots \dots$.
 (a) 25° (b) 20° (c) 35° (d) 3°

6 In the opposite figure :

$AD = DC$, $m(\angle C) = 30^\circ$, $m(\angle ABC) = 90^\circ$, $AB = 5$ cm., then the perimeter of $\triangle ABD = \dots \dots \dots$ cm.

(a) 5 (b) 15 (c) 20 (d) 25



2 Complete :

[1] ABCD is a rectangle, $AB = 3$ cm., $BC = 4$ cm., then $BD = \dots \dots \dots$ cm.

[2] In $\triangle ABC$, if D is the midpoint of \overline{BC} and $AD = \frac{1}{2}BC$, then $m(\angle CAB) = \dots \dots \dots$.

[3] The longest side in the right-angled triangle is

[4] If $\triangle ABC \cong \triangle XYZ$, then $AC - XZ = \dots \dots \dots$.

[5] The median that is drawn from the vertex angle of an isosceles triangle and

Geometry

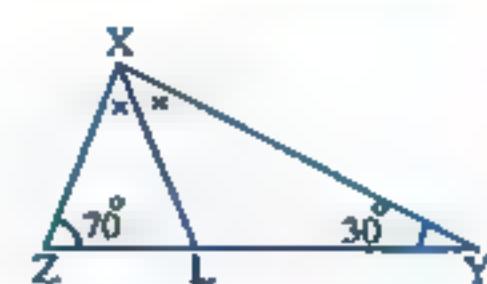
3 [a] In the opposite figure :

\overrightarrow{XL} bisects $\angle YXZ$, $m(\angle Y) = 30^\circ$

, $m(\angle Z) = 70^\circ$

1 Find : $m(\angle LXZ)$ and $m(\angle XLZ)$

2 Prove that : $\triangle XLZ$ is an isosceles triangle.

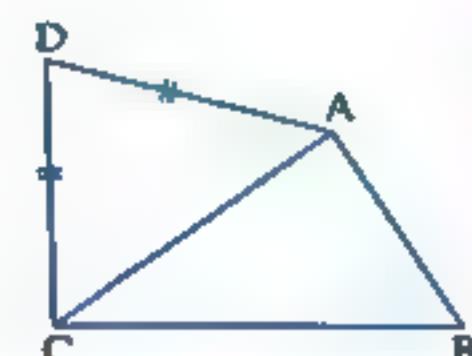


[b] In the opposite figure :

ABCD is a quadrilateral

, $AD = DC$, $BC > AB$

Prove that : $m(\angle BAD) > m(\angle BCD)$



4 [a] In the opposite figure :

X is the midpoint of \overline{AC} , $AB = 8$ cm.

, Y is the midpoint of \overline{BC} , $AM = 5$ cm., $BX = 6$ cm.

Find : The perimeter of $\triangle XMY$

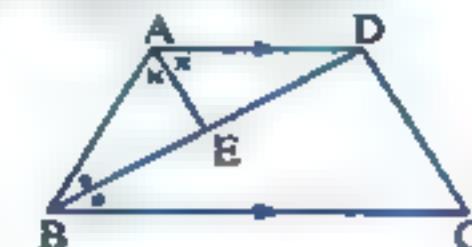
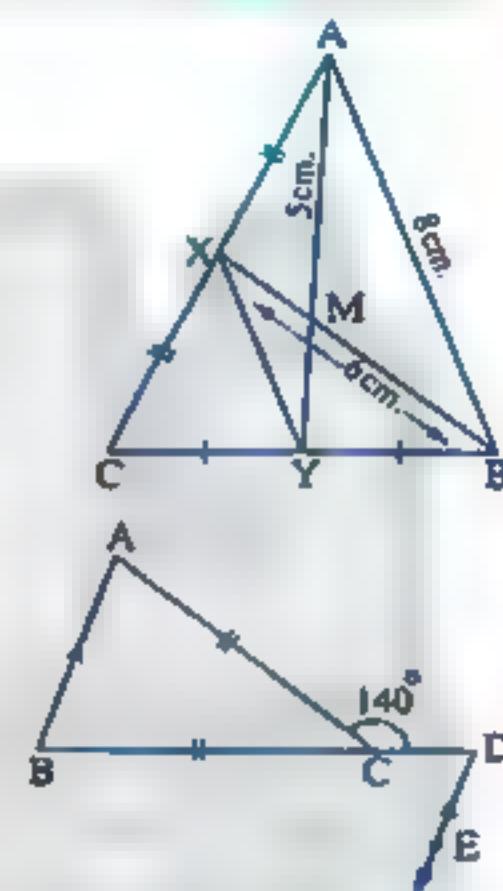
[b] In the opposite figure :

$C \in \overline{BD}$, $CA = CB$

, $\overline{AB} \parallel \overline{DE}$

, $m(\angle ACD) = 140^\circ$

Find : $m(\angle A)$ and $m(\angle BDE)$



5 [a] In the opposite figure :

ABCD is a quadrilateral, $\overline{AD} \parallel \overline{BC}$

, \overrightarrow{BD} bisects $\angle ABC$

, \overrightarrow{AE} bisects $\angle BAD$

Prove that : 1 $AD = AB$

2 $\overline{AE} \perp \overline{BD}$

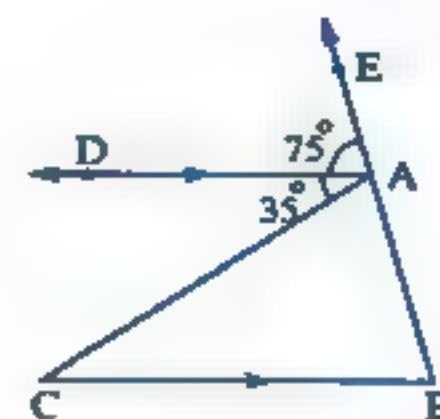
[b] In the opposite figure :

$E \in \overline{BA}$, $\overline{AD} \parallel \overline{BC}$

, $m(\angle DAE) = 75^\circ$

, $m(\angle DAC) = 35^\circ$

Prove that : $BC > AB$



10

El-Monofia Governorate

El-Shohada Directorate
Maths Supervision

Answer the following questions :

1 Choose the correct answer :

1 The intersecting point of the medians of the triangle divides each median in the ratio of from its base.
 (a) 1 : 2 (b) 2 : 1 (c) 3 : 1 (d) 1 : 3

2 The number of symmetry axes of the isosceles triangle is
 (a) 1 (b) 2 (c) 3 (d) 4

3 The sum of lengths of any two sides of a triangle the length of the third side.
 (a) $<$ (b) $>$ (c) $=$ (d) \equiv

4 The diagonals are perpendicular in the
 (a) trapezium. (b) parallelogram. (c) square. (d) rectangle.

5 If $\triangle ABC$ is right-angled at B, $AB = 6 \text{ cm.}$, $BC = 8 \text{ cm.}$, then the length of the median drawn from B equals cm.
 (a) 3 (b) 4 (c) 5 (d) 6

6 If 4 cm., $(X + 3)$ cm. and 8 cm. are side lengths of an isosceles triangle, then $X =$
 (a) 3 (b) 4 (c) 5 (d) 6

2 Complete each of the following :

1 The base angles in an isosceles triangle are

2 If $m(\angle A) = 100^\circ$, then $m(\text{reflex } \angle A) =$ ^o

3 The number of medians of the isosceles triangle is

4 In $\triangle ABC$, if $AB > BC$, then $m(\angle A) \dots m(\angle C)$

5 The bisector of the vertex angle of an isosceles triangle bisects the base and

3 [a] In the opposite figure :

ABC is a triangle in which D, E are the midpoints of \overline{AB} , \overline{AC} , $FC = 4 \text{ cm.}$, $FB = 6 \text{ cm.}$ and $BC = 8 \text{ cm.}$

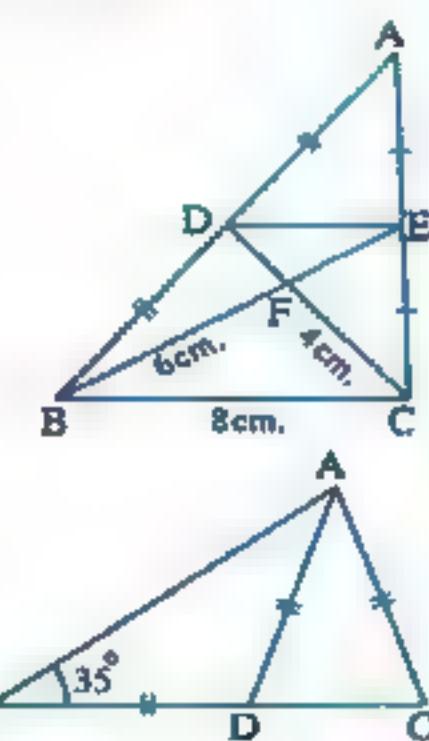
Find : The perimeter of $\triangle DFE$

[b] In the opposite figure :

$AC = AD = BD$

, $m(\angle B) = 35^\circ$

Find : $m(\angle BAC)$



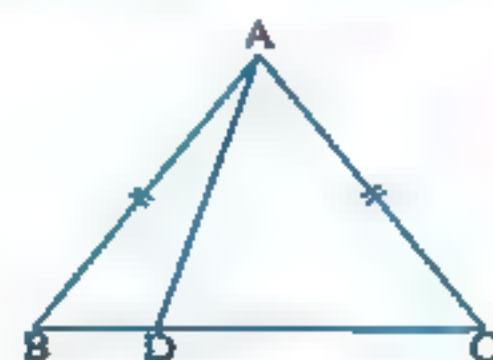
Geometry

4 [a] In the opposite figure :

$$AC = AB$$

Prove that :

$$AB > AD$$



[b] ABC is a triangle in which $m(\angle A) = 40^\circ$, $m(\angle B) = 80^\circ$ Arrange the lengths of the sides of the triangle descendingly.

5 In the opposite figure :

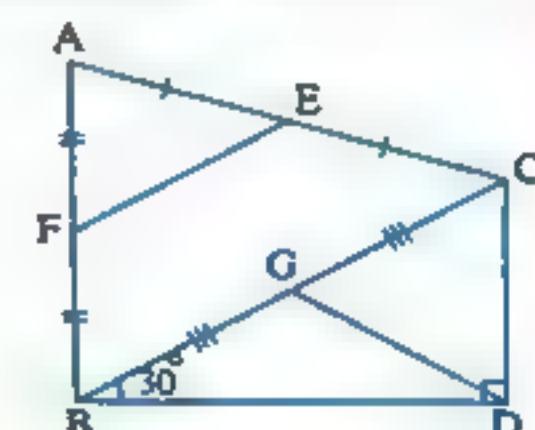
F, E, G are the midpoints of \overline{AB} , \overline{AC} , \overline{BC}

, $m(\angle BDC) = 90^\circ$, $m(\angle CBD) = 30^\circ$

, $BC = 10$ cm.

1 Prove that : $FE = DC = GD$

2 Find : The perimeter of $\triangle GCD$



Talkha Educational Directorate
A.M.D.L School



Answer the following questions :

6 Choose the correct answer from the given ones :

1] The numbers 4 , $X + 4$, 8 can be lengths of sides of an isosceles triangle if $X = \dots$

(a) 4 (b) 0 (c) 3 (d) 8

2] In $\triangle LMN$, if $m(\angle M) = 55^\circ$, $m(\angle N) = 80^\circ$, then $LM \dots MN$

(a) $<$ (b) $>$ (c) $=$ (d) twice

3] The measure of the exterior angle of the equilateral triangle equals \dots

(a) 30° (b) 60° (c) 90° (d) 120°

4] If \overline{AD} is a median of $\triangle ABC$, and M is the point of concurrence of the medians, then $AD = \dots AM$

(a) $\frac{1}{3}$ (b) $\frac{2}{3}$ (c) $\frac{1}{2}$ (d) $\frac{3}{2}$

5] The base angles of the isosceles triangle are \dots

(a) alternate (b) corresponding (c) congruent (d) supplementary

6] If $XA = XB$, $YA = YB$, then $\overleftrightarrow{XY} \dots \overline{AB}$

(a) \perp (b) \cong (c) \parallel (d) $=$

2 Complete the following :

- 1 The number of axes of symmetry of the isosceles triangle is
- 2 The bisector of the vertex angle of the isosceles triangle
- 3 The medians of the triangle intersect at
- 4 The longest side in the right-angled triangle is the
- 5 In $\triangle ABC$, if $AB = AC$, $m(\angle C) = 40^\circ$, then $m(\angle A) = \dots^\circ$

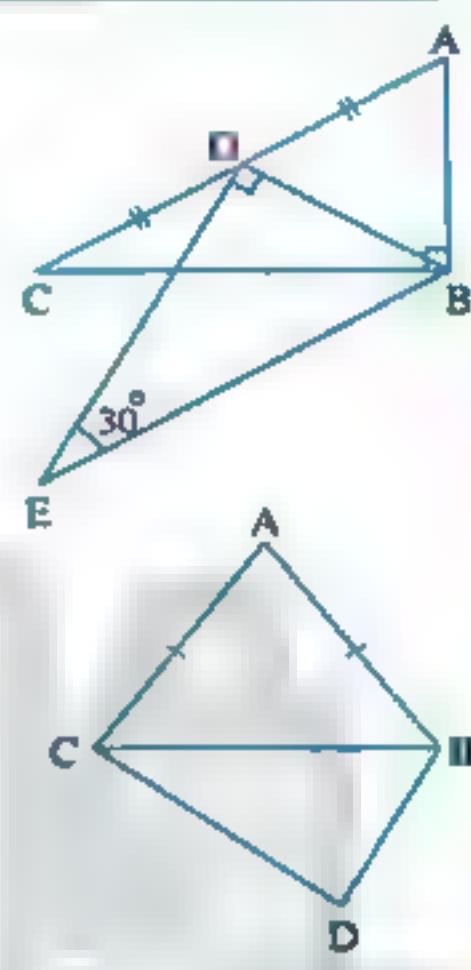
3 [a] In the opposite figure :

$$m(\angle ABC) = m(\angle BDE) = 90^\circ$$

$$, m(\angle E) = 30^\circ$$

, D is the midpoint of \overline{AC}

Prove that : $AC = BE$

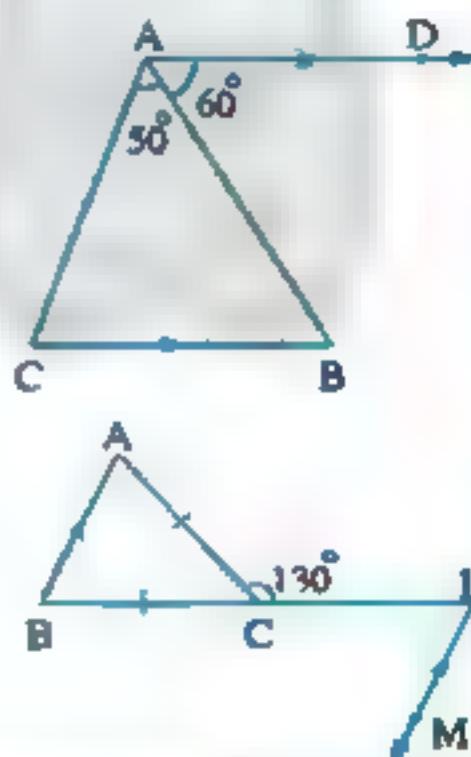


[b] In the opposite figure :

$$AB = AC, DC > DB$$

Prove that :

$$m(\angle ABD) > m(\angle ACD)$$



4 [a] In the opposite figure :

$$\text{ABC is a triangle, } \overrightarrow{AD} \parallel \overrightarrow{CB}$$

$$, m(\angle DAB) = 60^\circ, m(\angle BAC) = 50^\circ$$

Prove that : $AB > AC$

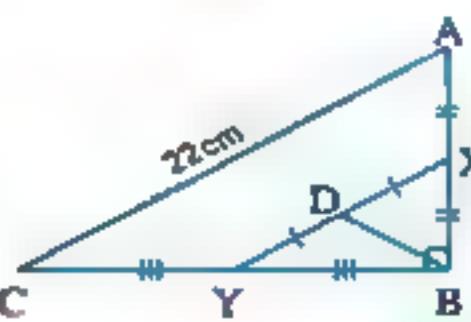
[b] In the opposite figure :

$$C \in \overrightarrow{LB}, AC = BC$$

$$, m(\angle LCA) = 130^\circ$$

$$, \overrightarrow{LM} \parallel \overrightarrow{AB}$$

Find : $m(\angle MLC)$



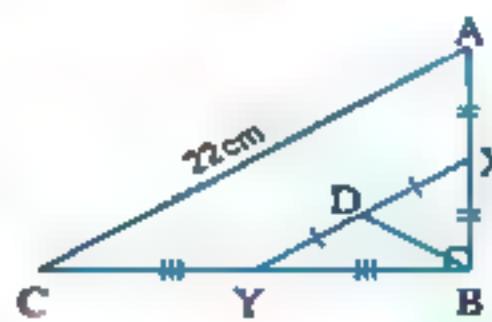
5 [a] In the opposite figure :

$$m(\angle ABC) = 90^\circ, X, Y, D$$

are the midpoints of \overline{AB} , \overline{BC} , \overline{XY}

respectively, if $AC = 22 \text{ cm}$.

Find : BD

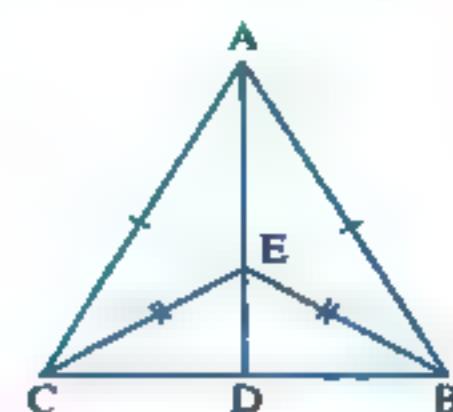


Geometry

[b] In the opposite figure :

$$AB = AC, EB = EC$$

Prove that : $BD = CD$



12

Suez Governorate

Directorate of Education
Inspection of Mathematics

Answer the following questions :

1 Complete :

- 1 The base angles in an isosceles triangle are
- 2 If the angles of a triangle are congruent, then the triangle is
- 3 In $\triangle ABC$, if $m(\angle A) = 70^\circ$, $m(\angle B) = 50^\circ$, then the longest side is
- 4 The point of concurrence of the medians of the triangle divides each median in the ratio of : from its vertex.
- 5 In $\triangle ABC$, if $m(\angle A) = 30^\circ$ and $m(\angle B) = 90^\circ$, then $AC = \dots BC$

2 Choose the correct answer :

- 1 The triangle which has three axes of symmetry is

 - (a) scalene. (b) isosceles. (c) right-angled. (d) equilateral.

- 2 If the lengths of two sides in an isosceles triangle are 3 cm. and 7 cm., then the length of the third side equals cm.
 - (a) 3 (b) 4 (c) 6 (d) 7
- 3 XYZ is a triangle in which $m(\angle Z) = 70^\circ$ and $m(\angle Y) = 60^\circ$, then $YZ \dots XY$
 - (a) $>$ (b) $<$ (c) $=$ (d) twice

4 In the opposite figure :

$$CA = CB, m(\angle B) = x^\circ$$

$$, m(\angle ACD) = 100^\circ \text{ where } C \in \overline{BD}$$

$$, \text{then } x = \dots$$

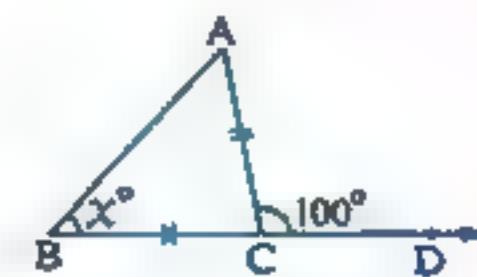
$$(a) 50^\circ \quad (b) 100^\circ \quad (c) 150^\circ \quad (d) 200^\circ$$

$$5 \text{ In } \triangle ABC, \text{ if } AB = AC \text{ and } \overline{AD} \text{ is a median, then } \overline{AD} \dots \overline{BC}$$

$$(a) \equiv \quad (b) \perp \quad (c) \subset \quad (d) //$$

$$6 \text{ In } \triangle ABC, \text{ if } AB = 3 \text{ cm.}, BC = 5 \text{ cm.}, \text{ then } AC \in \dots$$

$$(a) [2, 8] \quad (b) [2, 7] \quad (c) [2, 15] \quad (d) [8, 15]$$

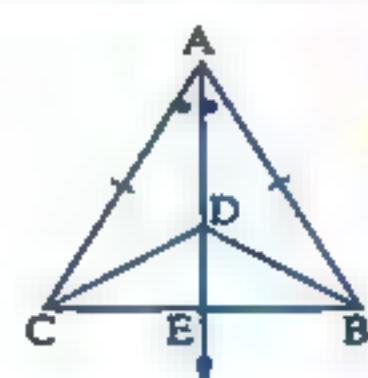


3 [a] ABC is a triangle in which $m(\angle A) = 40^\circ$, $m(\angle B) = 75^\circ$ Arrange the lengths of sides of the triangle descendingly.

[b] In the opposite figure :

$AB = AC$, \overline{AE} bisects $\angle BAC$
 $, \overline{AE} \cap \overline{BC} = \{E\}$, $D \in \overline{AE}$

Prove that : $BD = CD$



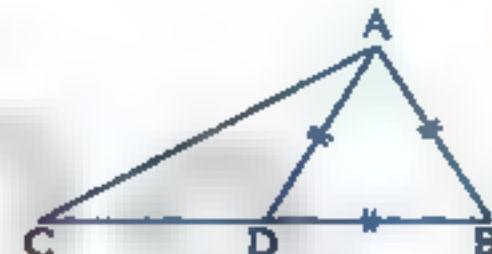
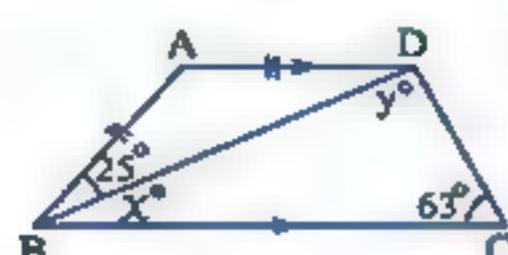
4 [a] In the opposite figure :

$\overline{AD} \parallel \overline{BC}$, $AD = AB$
 $, m(\angle ABD) = 25^\circ$, $m(\angle C) = 63^\circ$
 $, m(\angle DBC) = x^\circ$, $m(\angle CDB) = y^\circ$

Find the value of each of : x and y

[b] In the opposite figure :

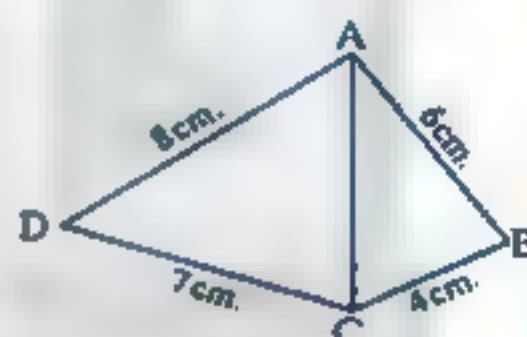
$AB = BD = DA$
 Prove that : $BC > AC$



5 [a] In the opposite figure :

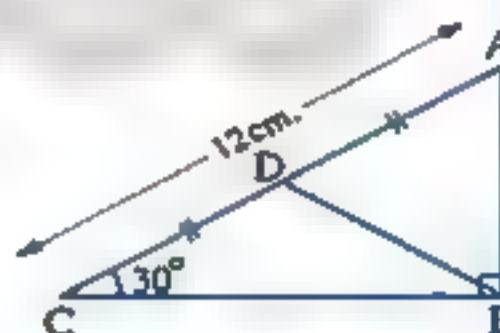
ABCD is a quadrilateral
 $, AB = 6 \text{ cm.}$, $BC = 4 \text{ cm.}$
 $, CD = 7 \text{ cm.}$, $AD = 8 \text{ cm.}$

Prove that : $m(\angle BCD) > m(\angle BAD)$



[b] In the opposite figure :

ABC is a triangle, $m(\angle ABC) = 90^\circ$
 $, D$ is the midpoint of \overline{AC}
 $, AC = 12 \text{ cm.}$, $m(\angle C) = 30^\circ$
 , then find : The perimeter of $\triangle ABD$



13 El-Beheira Governorate

Damenhour Directorate
 Al-Farabi Language School



Answer the following questions :

1 Complete the following :

1 The length of the side opposite to the angle of measure 30° in the right-angled triangle equals the length of the hypotenuse.

Geometry

2 If \overline{AD} is a median in $\triangle ABC$, M is the point of intersection of its medians and $AM = 12 \text{ cm.}$, then $AD = \dots \dots \dots$

3 The number of axes of symmetry of the isosceles triangle equals $\dots \dots \dots$

4 In a triangle, if two angles are unequal in measure, then the greater angle in measure is opposite to $\dots \dots \dots$

5 If $\overline{AB} \equiv \overline{XY}$ and $AB = 5 \text{ cm.}$, then $2AB - XY = \dots \dots \dots$

2 Choose the correct answer :

1 The measure of one of the base angles in the isosceles triangle is 65° , then the measure of its vertex angle equals $\dots \dots \dots^\circ$
 (a) 65 (b) 50 (c) 130 (d) 55

2 If 4 cm., $(X + 3)$ cm. and 8 cm. are side lengths of an isosceles triangle, then $X = \dots \dots \dots$
 (a) 4 (b) 3 (c) 5 (d) 8

3 If $\triangle ABC$ is right-angled at B, $AB = 6 \text{ cm.}$, $BC = 8 \text{ cm.}$, then the length of the median drawn from B equals $\dots \dots \dots \text{ cm.}$
 (a) 10 (b) 8 (c) 6 (d) 5

4 The diagonals are perpendicular in the $\dots \dots \dots$
 (a) trapezium. (b) parallelogram. (c) square. (d) triangle.

5 The point of concurrence of the medians of the triangle divides each median in the ratio of $\dots \dots \dots$ from the base.
 (a) $1 : 2$ (b) $1 : 3$ (c) $2 : 1$ (d) $3 : 1$

6 The acute angle supplements $\dots \dots \dots$ angle.
 (a) an acute (b) an obtuse (c) a right (d) a reflex

3 [a] In the opposite figure :

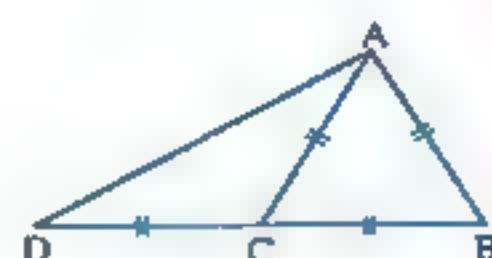
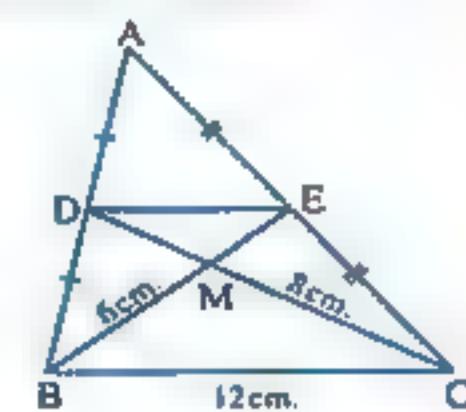
\overline{BE} , \overline{CD} are medians in $\triangle ABC$,
 $MB = 6 \text{ cm.}$, $MC = 8 \text{ cm.}$,
 $BC = 12 \text{ cm.}$

Find : The perimeter of $\triangle MDE$

[b] In the opposite figure :

$AB = BC = AC = DC$

Prove that : $m(\angle BAD) = 90^\circ$



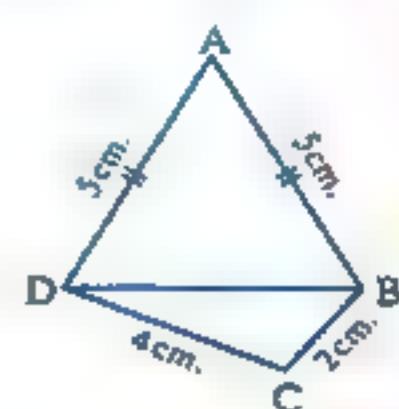
4 [a] In the opposite figure :

ABCD is a quadrilateral in which $AB = AD = 5 \text{ cm.}$

, $BC = 2 \text{ cm.}$, $DC = 4 \text{ cm.}$

Prove that :

$m(\angle ABC) > m(\angle ADC)$

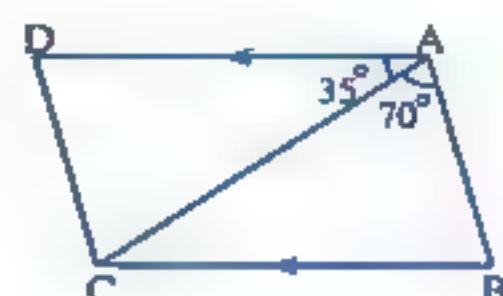


[b] In the opposite figure :

$\overline{AD} \parallel \overline{BC}$, $m(\angle BAC) = 70^\circ$

and $m(\angle DAC) = 35^\circ$

Prove that : $AC > BC$



5 In the opposite figure :

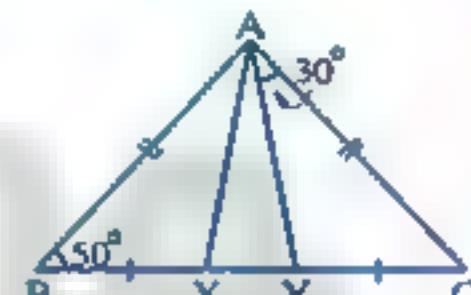
ABC is a triangle in which

$AB = AC$, $BX = CY$

If $m(\angle B) = 50^\circ$, $m(\angle CAY) = 30^\circ$

1 Prove that : AYX is an isosceles triangle.

2 Find : $m(\angle AXY)$



14 El-Minia Governorate

El-Minia Directorate of Education
Kafr El-Manea Formal Language School



Answer the following questions :

1 Choose the correct answer :

1 The triangle in which the measures of two angles of it are 42° and 69° is

(a) an isosceles triangle. (b) an equilateral triangle.
(c) a scalene triangle. (d) a right-angled triangle.

2 In $\triangle ABC$ which is right-angled at B, if $AC = 20 \text{ cm.}$, then the length of the median drawn from B equals

(a) 10 cm. (b) 8 cm. (c) 6 cm. (d) 5 cm.

3 In $\triangle ABC$, if $m(\angle B) = 130^\circ$, then the longest side of it is

(a) \overline{BC} (b) \overline{AC} (c) \overline{AB} (d) its median.

4 The two angles are said to be supplementary if the sum of their measures is

(a) zero° (b) 90° (c) 180° (d) 360°

Geometry

5 The lengths which can be lengths of sides of a triangle are
 (a) (0, 3, 5) (b) (3, 3, 5) (c) (3, 3, 6) (d) (3, 3, 7)

6 ΔXYZ is an isosceles triangle in which $m(\angle X) = 100^\circ$, then $m(\angle Y) = \dots$
 (a) 100° (b) 80° (c) 60° (d) 40°

2 Complete :

1 The sum of measures of the accumulative angles at a point is°

2 The ray drawn from the midpoint of a side of a triangle parallel to another side the third side.

3 If the measure of an angle in an isosceles triangle equals 60° , then the triangle is

4 The point of concurrence of the medians of the triangle divides each median in the ratio of from the base.

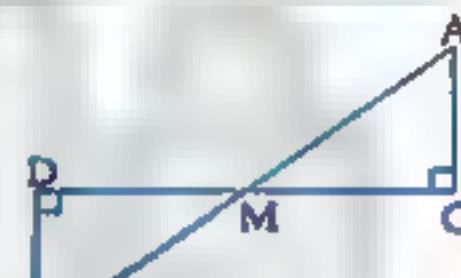
5 In ΔABC , $m(\angle B) = 70^\circ$, $m(\angle C) = 50^\circ$, then $AC \dots AB$

3 [a] In the opposite figure :

$$\overline{AB} \cap \overline{CD} = \{M\}, \overline{AC} \perp \overline{CD}$$

$$\rightarrow \overline{BD} \perp \overline{CD}$$

Prove that : $AB > CD$

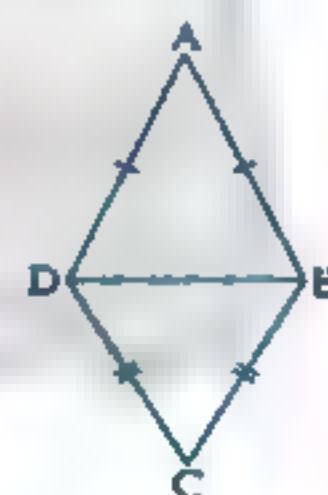


[b] In the opposite figure :

$$AB = AD, BC = CD$$

Prove that :

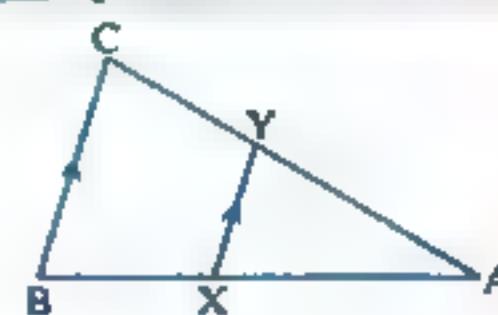
$$m(\angle ABC) = m(\angle ADC)$$



4 [a] In the opposite figure :

$$AB > BC, \overline{XY} \parallel \overline{BC}$$

Prove that : $AX > XY$



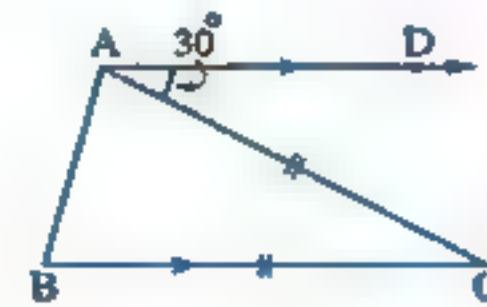
[b] In the opposite figure :

ABC is a triangle in which $AC = BC$

$$, \overline{AD} \parallel \overline{BC}, m(\angle DAC) = 30^\circ$$

Find with proof :

The measures of the angles of ΔABC



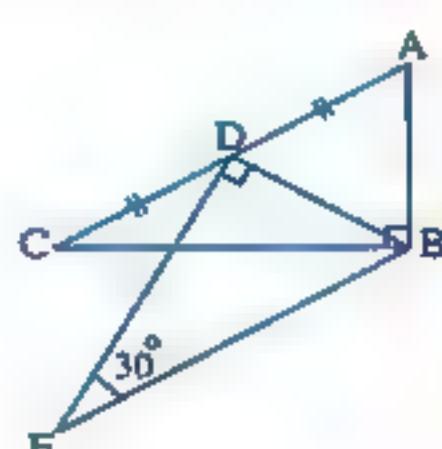
5 [a] In the opposite figure :

$$m(\angle ABC) = m(\angle BDE) = 90^\circ$$

$$, m(\angle E) = 30^\circ$$

, D is the midpoint of \overline{AC}

Prove that : $AC = BE$



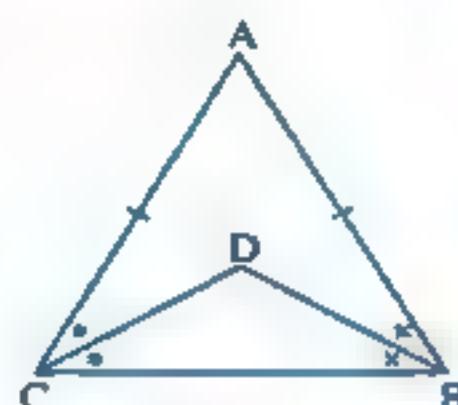
[b] In the opposite figure :

$AB = AC$, \overline{BD} bisects $\angle ABC$

and \overline{CD} bisects $\angle ACB$

Prove that :

$\triangle DBC$ is isosceles.



15

Qena Governorate

Qena Directorate of Education
Math's Supervision

Answer the following questions :

1 Complete each of the following :

- 1 The number of axes of symmetry of the equilateral triangle equals
- 2 In the triangle ABC , if $AC = BC$ and $m(\angle C) = 80^\circ$, then $m(\angle A) = \dots^\circ$
- 3 XYZ is a triangle , $m(\angle X) = 60^\circ$, $m(\angle Y) = 40^\circ$, then $XZ \dots ZY$
- 4 The point of intersection of the medians of the triangle divides each of them with the ratio of from the vertex.
- 5 The perpendicular bisector of a line segment is called

2 Choose the correct answer from those given :

- 1 The lengths 9 cm. , 4 cm. and may be the side lengths of an isosceles triangle.
 - (a) 9 cm.
 - (b) 13 cm.
 - (c) 5 cm.
 - (d) 4 cm.
- 2 \overline{AD} is a median of $\triangle ABC$, and M is the point of concurrence of the medians , then $AM = \dots AD$
 - (a) $\frac{2}{3}$
 - (b) $\frac{1}{2}$
 - (c) $\frac{3}{2}$
 - (d) 2
- 3 The measure of the exterior angle of an equilateral triangle equals
 - (a) 30°
 - (b) 60°
 - (c) 120°
 - (d) 90°

Geometry

4 In the triangle ABC , if $m(\angle B) = 90^\circ$, then the greatest side in length is

(a) \overline{AB} (b) \overline{AC} (c) \overline{CB} (d) \overline{XY}

5 In $\triangle XYZ$, if $XY > ZX$, then $m(\angle Y) \dots m(\angle Z)$

(a) $>$ (b) $<$ (c) $=$ (d) \cong

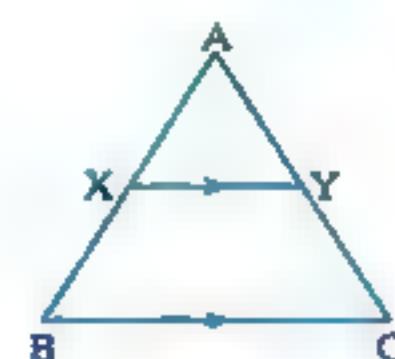
3 [a] In the opposite figure :

ABC is a triangle in which $AB = AC$

, $\overline{XY} \parallel \overline{BC}$

Prove that :

$\triangle AXY$ is an isosceles triangle.



[b] In $\triangle ABC$, $m(\angle A) = 40^\circ$, $m(\angle B) = 75^\circ$ Arrange the lengths of sides of $\triangle ABC$ in an ascending order.

4 [a] In the opposite figure :

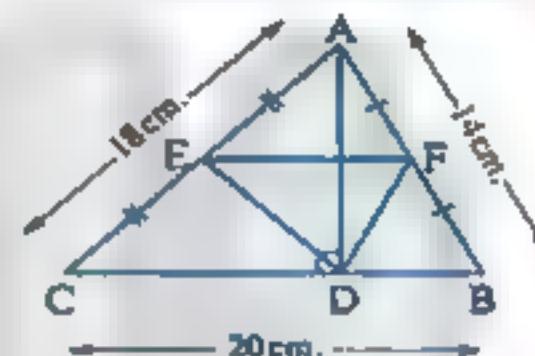
ABC is a triangle in which $AB = 14 \text{ cm.}$

, $AC = 18 \text{ cm.}$, $BC = 20 \text{ cm.}$

, E is the midpoint of \overline{AC}

, F is the midpoint of \overline{AB} , and $\overline{AD} \perp \overline{BC}$

Find : The perimeter of $\triangle DEF$



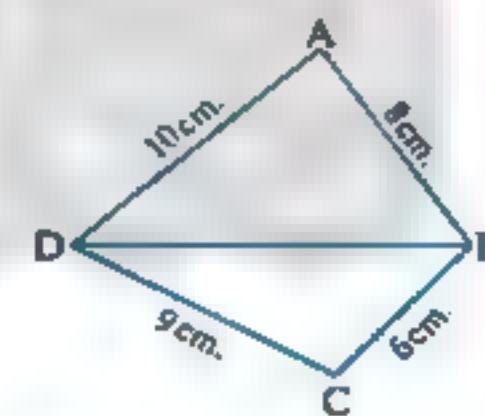
[b] In the opposite figure :

ABCD is a quadrilateral in which $AB = 8 \text{ cm.}$

, $BC = 6 \text{ cm.}$, $CD = 9 \text{ cm.}$

and $DA = 10 \text{ cm.}$

Prove that : $m(\angle ABC) > m(\angle ADC)$

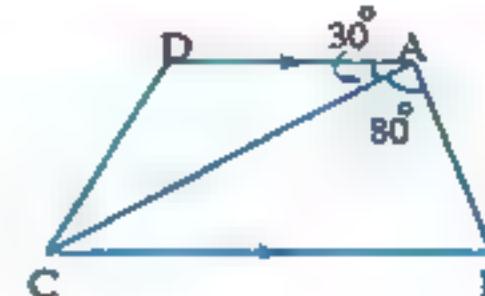


5 [a] In the opposite figure :

$\overline{AD} \parallel \overline{BC}$, $m(\angle BAC) = 80^\circ$

, $m(\angle DAC) = 30^\circ$

Prove that : $BC > AB$



[b] Complete : In $\triangle ABC$, if $AB = 7 \text{ cm.}$, $AC = 5 \text{ cm.}$, then $< BC < \dots$

Final
Examinations of

Geometry
2019



هذا العمل خاص بموقع ذاكرولي التعليمي ولا يسمح بتداوله على مواقع أخرى

Some Schools Examinations on Geometry

1

Cairo Governorate

East Nasr city administration
Heliopic Language School
Mathematics Department

Answer the following questions :

[1] Complete :

- (1) The intersection point of the three medians of the triangle divide the median in the ratio from the vertex.
- (2) In $\triangle ABC$: If $CA = CB$ and $m(\angle C) = m(\angle A)$, then $m(\angle B) = \dots \circ$
- (3) The bisector of the vertex angle of the isosceles triangle is and
- (4) If the measure of an angle in the isosceles triangle is 100° , then the number of axes of symmetry of $\triangle ABC$ is
- (5) The longest side in the right-angled triangle is

[2] Choose the correct answer :

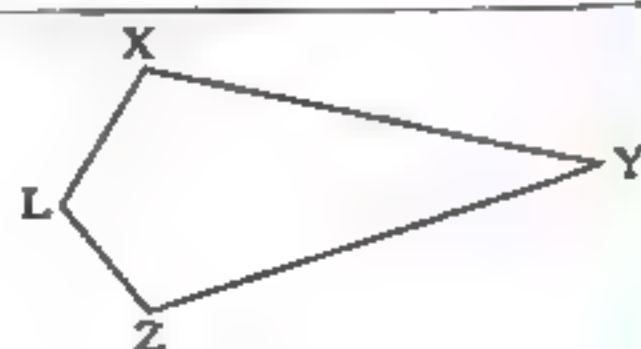
- (1) In $\triangle ABC$: If $m(\angle B) = 90^\circ$, then
- (a) $AC > CB$ (b) $AB > AC$ (c) $BC > AC$ (d) $AB = AC$
- (2) If the lengths of two sides of an isosceles triangle are 3 cm. and 7 cm. , then the length of the third side is
- (a) 3 (b) 4 (c) 7 (d) 10
- (3) In $\triangle ABC$: If $AB = AC$ and $m(\angle A) = 60^\circ$, then the number of axes of symmetry of the triangle ABC is
- (a) 0 (b) 1 (c) 2 (d) 3
- (4) Any triangle has medians.
- (a) 0 (b) 1 (c) 2 (d) 3
- (5) If $ABCD$ is a square , then the axes of symmetry of \overline{AC} is
- (a) \overleftrightarrow{AD} (b) \overleftrightarrow{BC} (c) \overleftrightarrow{BD} (d) \overleftrightarrow{AB}

[3] [a] In the opposite figure :

$$XY > XL$$

$$\text{and } YZ > ZL$$

Prove that : $m(\angle XLZ) > m(\angle XYZ)$

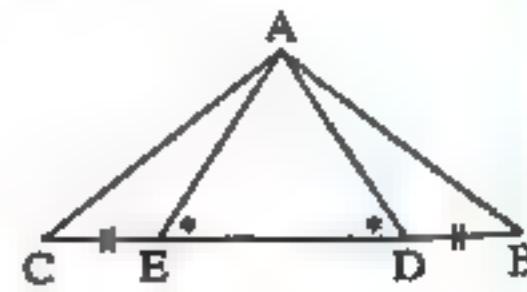


[b] In the opposite figure :

$$\angle ADC \equiv \angle AED \text{ and } BD = CE$$

, B , D , E and C are collinear.

Prove that : $\triangle ABC$ is an isosceles triangle.



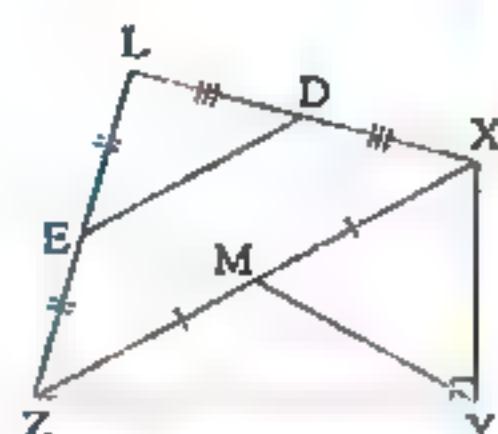
[a] In the opposite figure :

$$m(\angle XYZ) = 90^\circ$$

, D is midpoint of \overline{XL}

, E is midpoint of \overline{ZL} and M is the midpoint of \overline{XZ}

Prove that : $DE = YM$



[b] In the opposite figure :

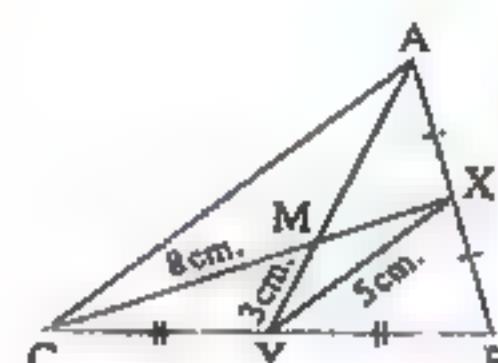
ABC is a triangle , X is the midpoint of \overline{AB}

, Y is midpoint of \overline{BC} , $XY = 5 \text{ cm.}$ and $\overline{XC} \cap \overline{AY} = \{M\}$

where $CM = 8 \text{ cm.}$, $YM = 3 \text{ cm.}$

Find : (1) The perimeter of $\triangle MXY$

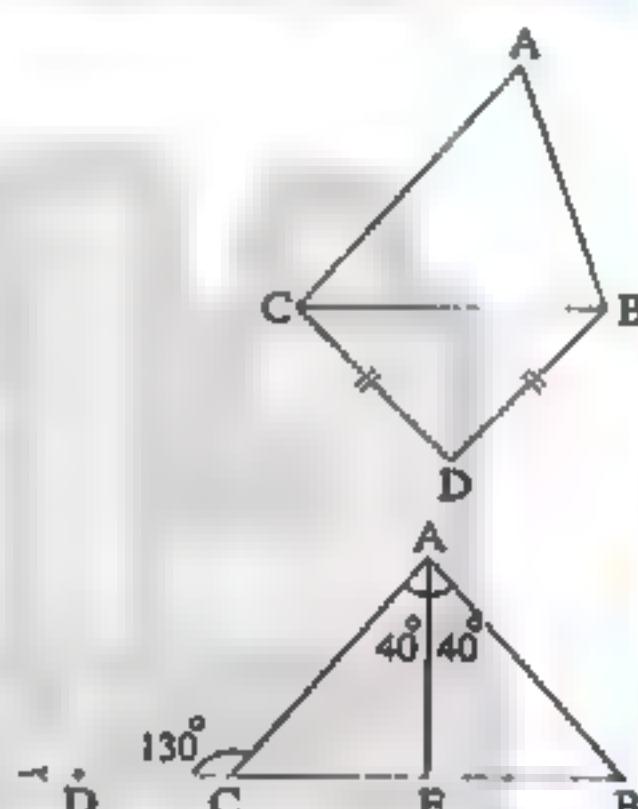
(2) The perimeter of $\triangle MAC$



[a] In the opposite figure :

$AC > AB$ and $DB = DC$

Prove that : $m(\angle ABD) > m(\angle ACD)$



[b] In the opposite figure :

$C \in \overline{BD}$, $m(\angle ACD) = 130^\circ$

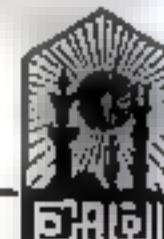
and $m(\angle BAE) = m(\angle CAE) = 40^\circ$

Prove that : (1) $\overline{AE} \perp \overline{BC}$

(2) E bisects \overline{BC}

2

Cairo Governorate

 Meedi Educational Zone
 Sakkar Language School


Answer the following questions :

[1] Complete :

(1) In $\triangle XYZ$, $m(\angle X) = 90^\circ$, then the longest side is

(2) The base angles of the isosceles triangle are

(3) ABC is a triangle in which $AB = 4 \text{ cm.}$, $CB = 7 \text{ cm.}$, then $AC \in].....,$

(4) If $A \in$ the axis of symmetry of \overline{XY} , then =

(5) If the measure of an angle in the isosceles triangle equals 60° , then the triangle has axes of symmetry.

Geometry

2 Choose the correct answer :

(1) The measure of the exterior angle of equilateral triangle =

(a) 90° (b) 120° (c) 45° (d) 60° (2) If \overline{AD} is a median in $\triangle ABC$ and M is the point of intersection of the medians , then $AM = \dots AD$ (a) $\frac{1}{3}$ (b) $\frac{2}{3}$ (c) $\frac{3}{2}$ (d) $\frac{1}{2}$ (3) In $\triangle XYZ$, if $m(\angle Z) = 70^\circ$ and $m(\angle Y) = 60^\circ$, then $YZ \dots XY$ (a) $<$ (b) $=$ (c) $>$ (d) is twice

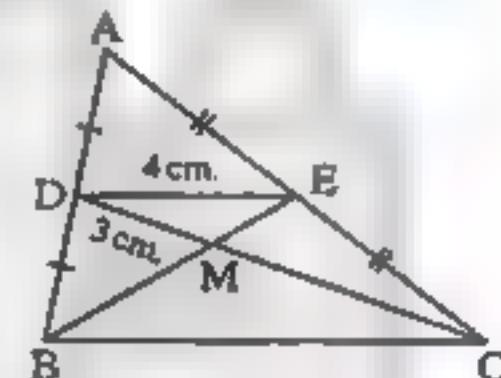
(4) The numbers 4 , 8 , can be lengths of sides of an isosceles triangle.

(a) 4 (b) 8 (c) 12 (d) 3(5) In $\triangle ABC$, if $m(\angle B) = 90^\circ$ and $m(\angle C) = 30^\circ$, then $AB \dots AC$ (a) $\frac{1}{3}$ (b) 2 (c) equals (d) $\frac{1}{2}$

3 [a] In the opposite figure :

D is the midpoint of \overline{AB} , E is the midpoint of \overline{AC}

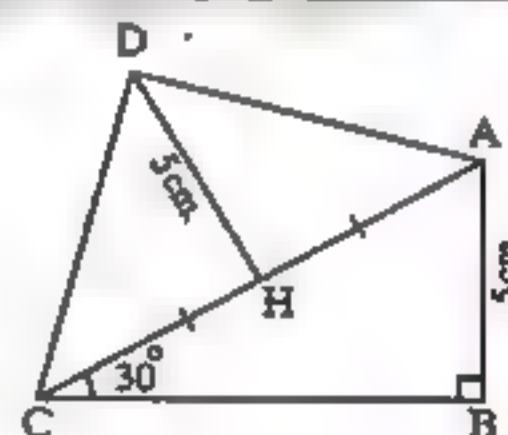
$$, \overline{CD} \cap \overline{BE} = \{M\}$$

If $DE = 4 \text{ cm.}$, $DM = 3 \text{ cm.}$, $BE = 6 \text{ cm.}$ Find : The perimeter of $\triangle BMC$ [b] In $\triangle ABC$, if $AB = 5 \text{ cm.}$, $BC = 7 \text{ cm.}$ and $AC = 9 \text{ cm.}$

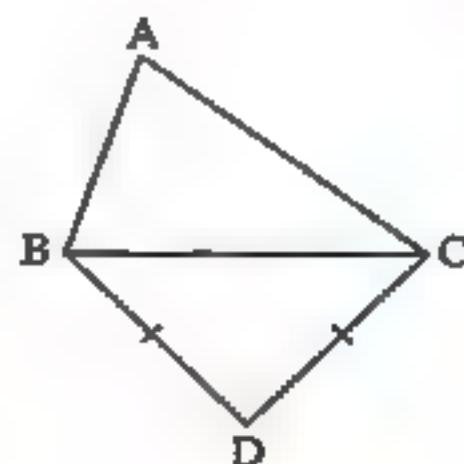
Arrange the measures of its angles in a descending order.

4 [a] In the opposite figure :

ABC is a right angled triangle at B

, $m(\angle ACB) = 30^\circ$, $AB = 5 \text{ cm.}$, $DH = 5 \text{ cm.}$ and H is the midpoint of \overline{AC} Prove that : $m(\angle ADC) = 90^\circ$ 

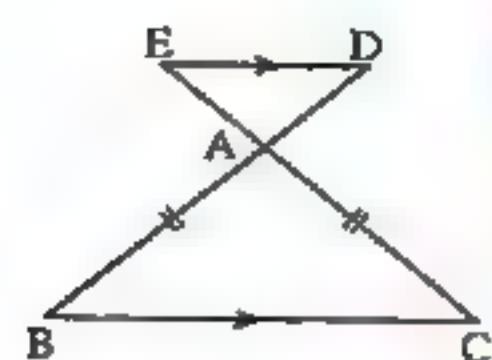
[b] In the opposite figure :

If $AC > AB$ and $DC = DB$ Prove that : $m(\angle ABD) > m(\angle ACD)$ 

5 [a] In the opposite figure :

If $AB = AC$

Prove that : $AD = AE$



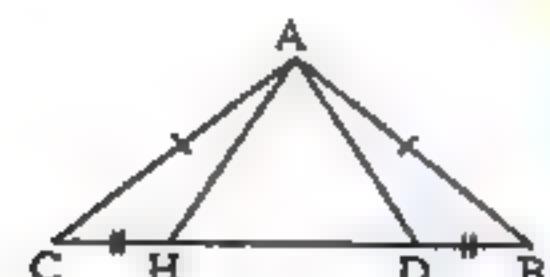
[b] In the opposite figure :

ABC is a triangle in which :

$AB = AC$, $BD = CH$

Prove that : ① $\triangle ADH$ is an isosceles triangle.

② $\angle AHD = \angle ADH$



Cairo Governorate

El-Sayda Zinab Educational Zone



Answer the following questions :

1 Choose the suitable answer :

① The number of axes of symmetry of an equilateral triangle is

(a) 0 (b) 1 (c) 2 (d) 3

② An isosceles triangle, one of its base angles has measure 50° , then the measure of the vertex angle =

(a) 50° (b) 60° (c) 70° (d) 80°

③ AD is a median of triangle ABC, and M is the point of intersection of the medians, then $AM = \dots AD$

(a) $\frac{1}{3}$ (b) $\frac{2}{3}$ (c) $\frac{1}{2}$ (d) $\frac{1}{4}$

④ If the lengths of two sides of a triangle are 4 cm. and 8 cm., then the length of the third side = cm.

(a) 3 (b) 4 (c) 8 (d) 12

⑤ In a triangle ABC, if $m(\angle A) = 80^\circ$ and $m(\angle C) = 60^\circ$, then $AB \dots BC$

(a) $<$ (b) $>$ (c) $=$ (d) \geq

2 Complete :

① If XYZ is a right-angled triangle at Y, then the longest side is

② The sum of measures of any two consecutive angles in the parallelogram = °

③ The straight line perpendicular to the midpoint of a line segment is called

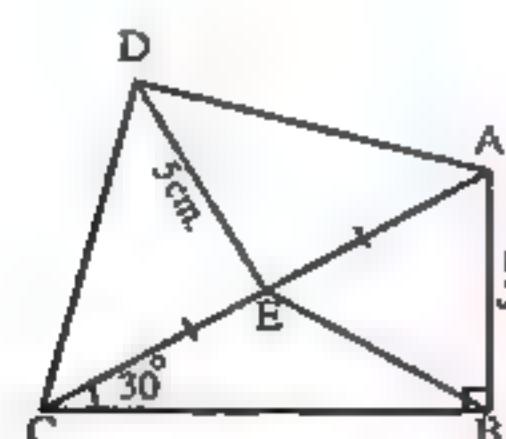
④ The bisectors of the vertex angle of an isosceles triangle and

⑤ The measure of the exterior angle of the equilateral triangle = °

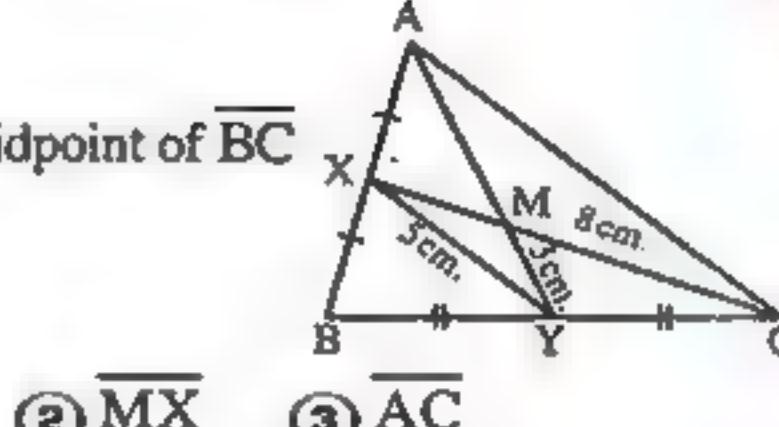
Geometry

3 [a] In the opposite figure :

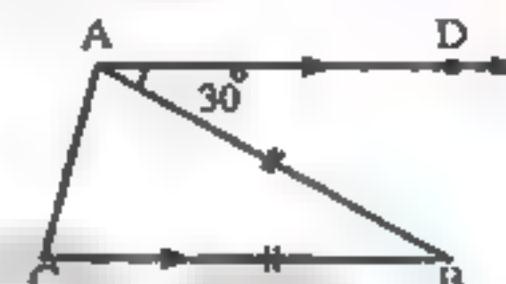
ABC is a right-angled triangle at B

, $m(\angle ACB) = 30^\circ$, AB = 5 cm., E is midpoint of \overline{AC} If DE = 5 cm. then prove that : $m(\angle ADC) = 90^\circ$ 

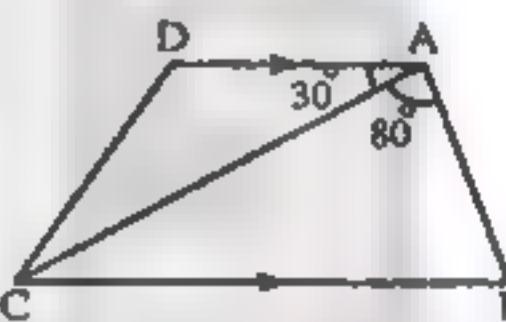
[b] In the opposite figure :

ABC is a triangle , X is the midpoint of \overline{AB} , Y is the midpoint of \overline{BC} , $XY = 5$ cm. , $\overline{XC} \cap \overline{AY} = \{M\}$ where : $CM = 8$ cm. , $YM = 3$ cm.Find with proof : The length of each of : ① \overline{AM} ② \overline{MX} ③ \overline{AC}

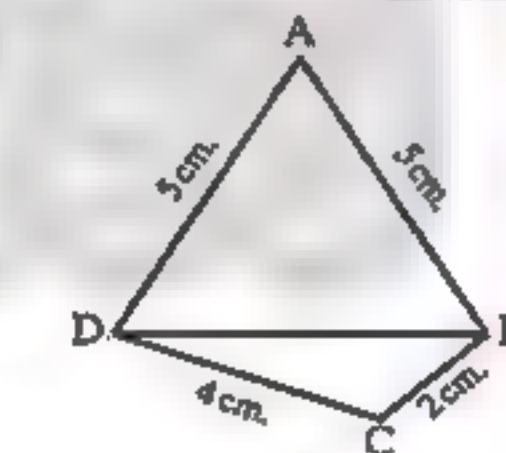
4 [a] In the opposite figure :

ABC is a triangle in which : $AB = BC$, $\overline{AD} \parallel \overline{BC}$, $m(\angle DAB) = 30^\circ$ Find : The measures of the angles of $\triangle ABC$ 

[b] In the opposite figure :

 $\overline{AD} \parallel \overline{BC}$, $m(\angle BAC) = 80^\circ$, $m(\angle DAC) = 30^\circ$ Prove that : $BC > AB$ 

5 In the opposite figure :

ABCD is a quadrilateral in which : $AB = AD = 5$ cm., $BC = 2$ cm. , $DC = 4$ cm.Prove that : $m(\angle ABC) > m(\angle ADC)$ 

Giza Governorate

Dokki District
Modern Normal Language School

Answer the following questions

1 Choose the correct answer from those given :

① In the opposite figure :

 $\triangle ADB$, $m(\angle ADB) = 90^\circ$, $BD = 5$ cm.and $AB = 10$ cm. , then $m(\angle A) = \dots^\circ$

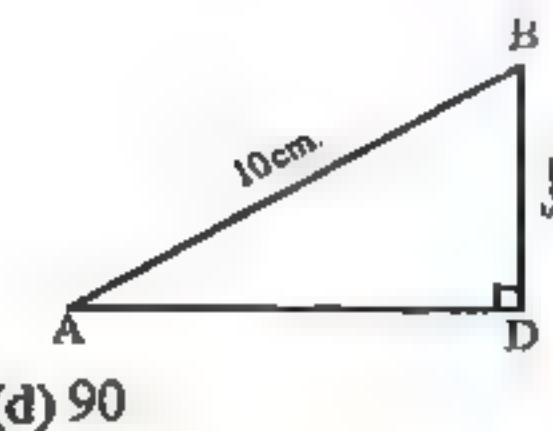
(a) 30

(b) 50

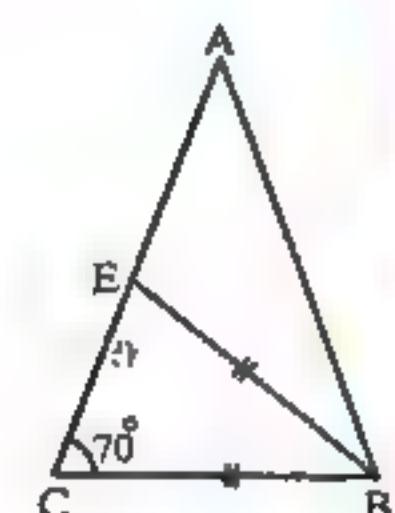
(c) 70

(d) 90

30



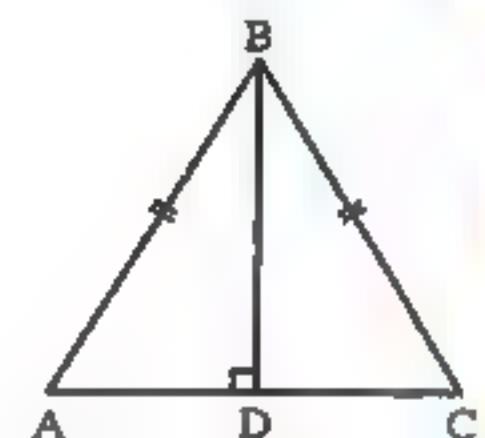
② In the opposite figure :

If $AB = AC$ and $BE = BC$, then : $m(\angle ABE) = \dots \dots \dots$ (a) 30° (b) 40° (c) 70° (d) 110° 

③ In the opposite figure :

 $\triangle ABC$, $AB = BC$, an altitude is drawn from B to \overline{AC} and intersects \overline{AC} at D

which conclusion is not always true ?

(a) $m(\angle ABD) = m(\angle CBD)$ (b) $m(\angle BDA) = m(\angle BDC)$ (c) $AD = BD$ (d) $AD = DC$ 

④ Which set of numbers represents the lengths of the sides of a triangle ?

(a) $\{5, 18, 13\}$ (b) $\{6, 17, 22\}$ (c) $\{16, 24, 7\}$ (d) $\{26, 8, 15\}$

⑤ The point of concurrency of medians divides each median in the ratio from the base.

(a) $1 : 2$ (b) $2 : 1$ (c) $3 : 1$ (d) $2 : 3$

② Complete :

① The longest side in the right-angled triangle is

② If the measure of an angle in the isosceles triangle equals 60° , then the triangle is

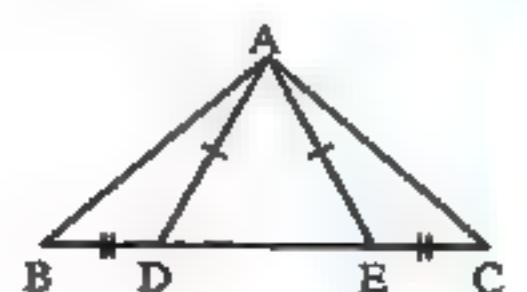
③ In the opposite figure :

 $x = \dots \dots \dots^\circ$ and $y = \dots \dots \dots^\circ$ 

④ If the length of the median drawn from the right vertex of a triangle is 6 cm. , then the length of the hypotenuse is cm.

⑤ In $\triangle ABC$, $m(\angle A) = 60^\circ$, $m(\angle B) = 50^\circ$, then the longest side is

④ [a] In the opposite figure :

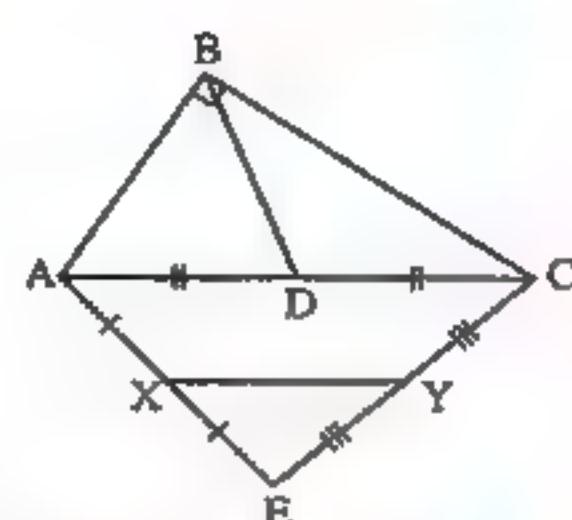
 $AD = AE$ and $BD = CE$ Prove that : $\triangle ABC$ is an isosceles triangle.

Geometry

[b] In the opposite figure :

- Δ ABC is right-angled at B
- , D is the midpoint of \overline{AC}
- , X and Y are the midpoints of \overline{AE} and \overline{CE} respectively.

Prove that : $BD = XY$



[4] [a] In the opposite figure :

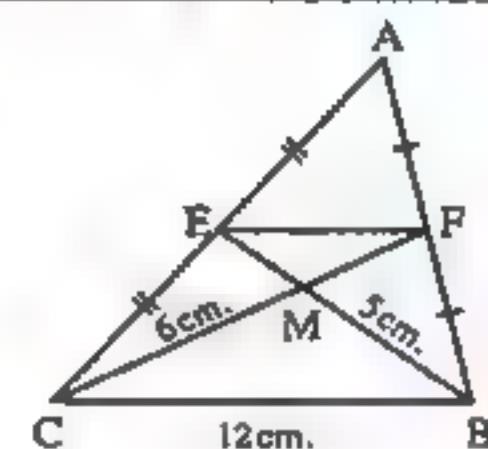
Δ ABC, F and E are the midpoints of \overline{AB} and \overline{AC} respectively.

If $BM = 5$ cm., $CM = 6$ cm., $BC = 12$ cm.,

then find : The perimeter of Δ MEF

[b] In Δ ABC, $m(\angle A) = 3x^\circ$, $m(\angle B) = (4x - 9)^\circ$
and $m(\angle C) = (2x + 9)^\circ$

Find the measure of each angle and arrange the sides in a descending order according to their lengths.

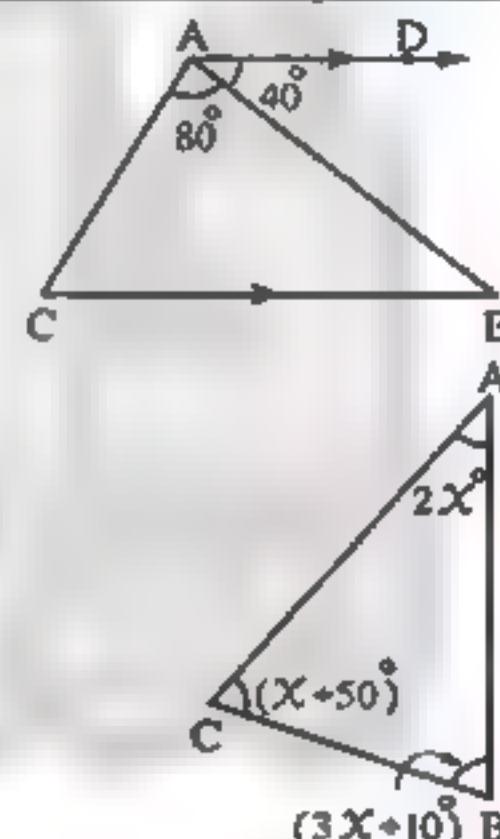


[5] [a] In the opposite figure :

Δ ABC, in which : $\overline{AD} \parallel \overline{BC}$

$m(\angle DAB) = 40^\circ$ and $m(\angle BAC) = 80^\circ$

Prove that : $AB > AC$



[b] In the opposite figure :

Show with proof, which sides are equal in length.

Omrania Directorate
El zedat Governmental Language School



5 Giza Governorate

Answer the following questions :

1 Complete each of the following :

- ① The point of concurrence of medians of a triangle divides each median in ratio : from the vertex.
- ② The longest side in the right-angled triangle is
- ③ The straight line perpendicular to the midpoint of a line segment is called
- ④ The base angles of the isosceles triangle are
- ⑤ In Δ ABC, if $AB < BC < AC$, then the greatest angle in measure is

2 Choose the correct answer from given ones :

① The number of axes of symmetry in the scalene triangle is
 (a) 1 (b) 2 (c) 3 (d) zero

② The measure of the exterior angle of an equilateral triangle is
 (a) 90° (b) 120° (c) 60° (d) 30°

③ The numbers 5 , 4 , can be lengths of sides of a triangle.
 (a) 8 (b) 9 (c) 10 (d) 12

④ In $\triangle ABC$, $AB = AC$ and $m(\angle B) = 70^\circ$, then $m(\angle A) =$
 (a) 140° (b) 70° (c) 40° (d) 110°

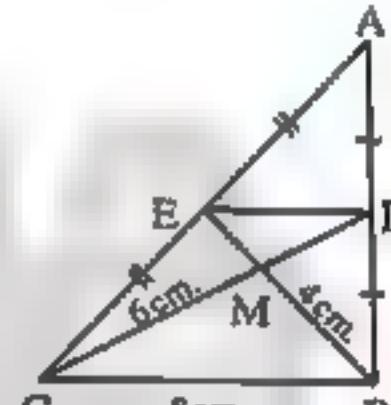
⑤ $\triangle ABC$ in which : $m(\angle B) > m(\angle C)$, then AC AB
 (a) $>$ (b) $<$ (c) $=$ (d) \leq

3 [a] In the opposite figure :

$\triangle ABC$ is a triangle in which D , E are midpoints of \overline{AB} and \overline{AC} respectively ,

$MC = 6 \text{ cm.}$, $MB = 4 \text{ cm.}$ and $BC = 8 \text{ cm.}$

Find : The perimeter of $\triangle DME$



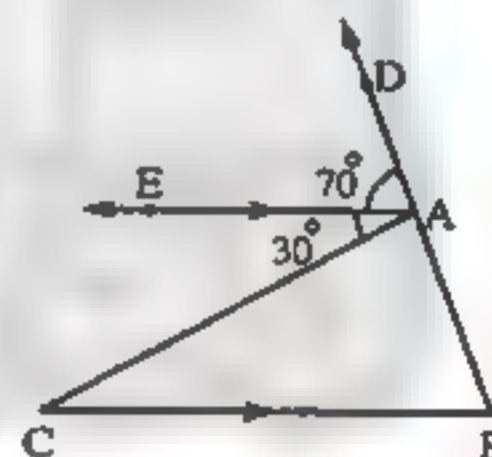
[b] In the opposite figure :

$\overline{AE} \parallel \overline{BC}$

, $m(\angle DAE) = 70^\circ$

, $m(\angle EAC) = 30^\circ$

Prove that : $AC > AB$

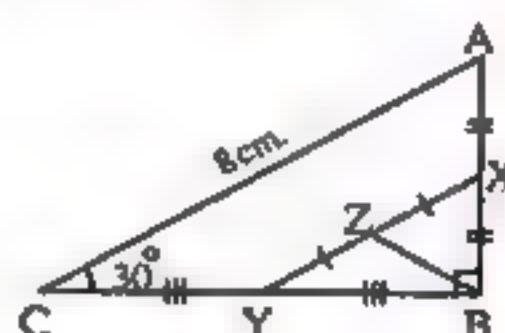


4 [a] In the opposite figure :

$\triangle ABC$ is a triangle in which : $m(\angle ABC) = 90^\circ$

, $m(\angle C) = 30^\circ$, X , Y and Z are midpoints of \overline{AB} , \overline{BC} and \overline{XY} respectively and $AC = 8 \text{ cm.}$

Find : The length of each of \overline{AB} , \overline{XY} , \overline{BZ}

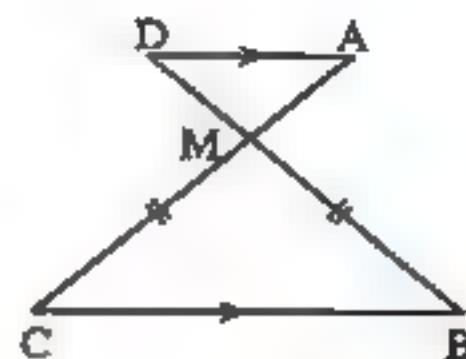


[b] In the opposite figure :

$\overline{AC} \cap \overline{BD} = \{M\}$

, $MB = MC$ and $\overline{AD} \parallel \overline{BC}$

Prove that : $MA = MD$



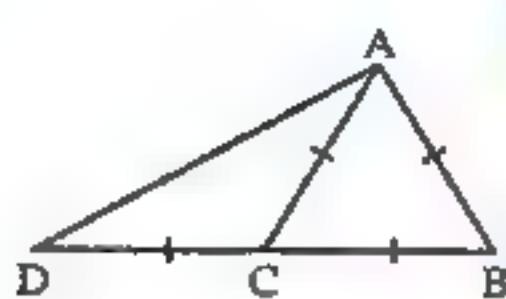
Geometry

5 In the opposite figure :

ABC is an equilateral triangle

, $D \in \overrightarrow{BC}$ such that $BC = CD$

Prove that : $\overline{BA} \perp \overline{AD}$



Alexandria Governorate

Middle Educational Directorate
Math's Supervision



Answer the following questions :

1 Choose the correct answer :

- ① The isosceles triangle has of symmetry.
(a) one axis (b) two axes (c) three axes (d) zero axes
- ② In $\triangle ABC$, if $m(\angle A) = 125^\circ$, then the longest side of it is
(a) \overline{AB} (b) \overline{AC} (c) \overline{BC} (d) its median
- ③ If XYZ is an isosceles triangle, $m(\angle Y) = 100^\circ$, then $m(\angle X) =$
(a) 80° (b) 40° (c) 20° (d) 100°
- ④ In $\triangle ABC$ if $m(\angle A) = 30^\circ$, $m(\angle B) = 90^\circ$, then $BC =$ AC
(a) $\frac{1}{2}$ (b) $\frac{2}{3}$ (c) $\frac{1}{3}$ (d) 2
- ⑤ The measure of each exterior angle of equilateral triangle is
(a) 180° (b) 360° (c) 60° (d) 120°

2 Complete :

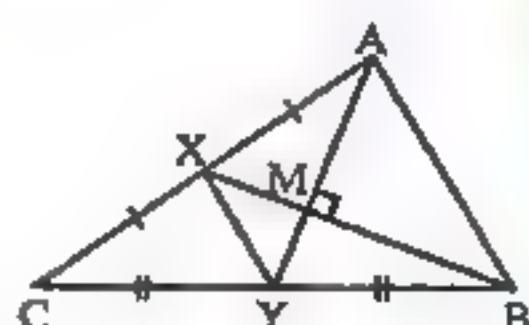
- ① The point of concurrence divides each median in the ratio from the base.
- ② The longest side in the right angled triangle is
- ③ The sum of measures of the exterior angles of a square is °
- ④ The numbers 8, 4, can be lengths of sides of an isosceles triangle.
- ⑤ The axis of symmetry of a line segment is the straight line which is

3 [a] In the opposite figure :

\overline{AY} and \overline{BX} are two medians where $\overline{AY} \perp \overline{BX}$

, if $AY = 12 \text{ cm}$, and $XM = 5 \text{ cm}$.

Find : The area of $\triangle ABM$



[b] ABC is a triangle in which : $m(\angle A) = 6x^\circ$, $m(\angle B) = (4x - 9)^\circ$ and $m(\angle C) = 3(x - 2)^\circ$ Arrange the lengths of sides descendingly.

Geometry

② The point of the intersection of the medians in triangle divides each median from the base into the ratio

(a) 1 : 2 (b) 2 : 1 (c) 3 : 1 (d) 2 : 3

③ The isosceles triangle has axis of symmetry.

(a) 0 (b) 1 (c) 2 (d) 3

④ If the lengths of two sides in an isosceles triangle 3 cm. and 7 cm. , then the length of the third side = cm.

(a) 3 (b) 4 (c) 7 (d) 10

⑤ In $\triangle ABC$, if $m(\angle A) < m(\angle B)$, then

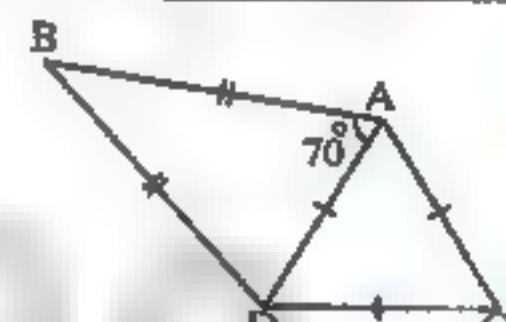
(a) $AC < BC$ (b) $AC > BC$ (c) $AC = BC$ (d) $\overline{AC} // \overline{BC}$

③ [a] In the opposite figure :

$AB = BD$, $m(\angle BAD) = 70^\circ$

, $\triangle ADC$ is an equilateral triangle.

Find : $m(\angle BDC)$



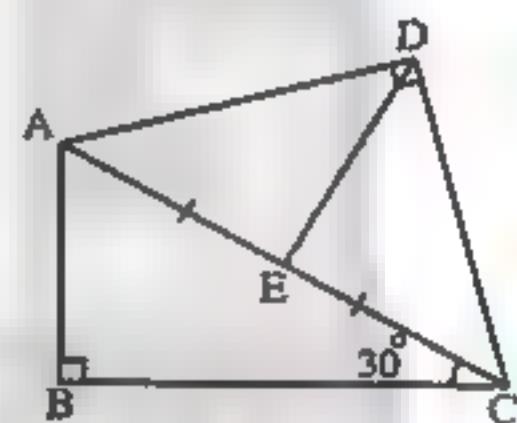
[b] In the opposite figure :

$m(\angle ABC) = m(\angle ADC) = 90^\circ$

, $m(\angle ACB) = 30^\circ$

, E is the midpoint of \overline{AC}

Prove that : $AB = ED$



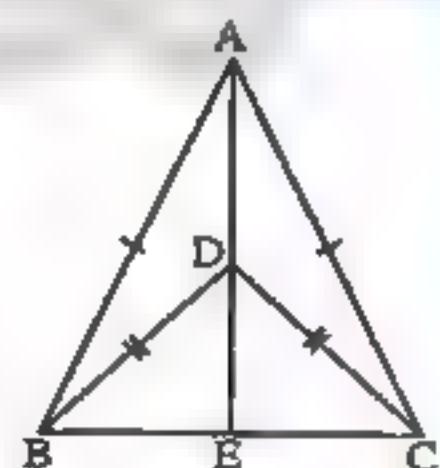
④ [a] In the opposite figure :

$AB = AC$, $DB = DC$, $D \in \overline{AE}$

Prove that :

① $\overline{AE} \perp \overline{BC}$

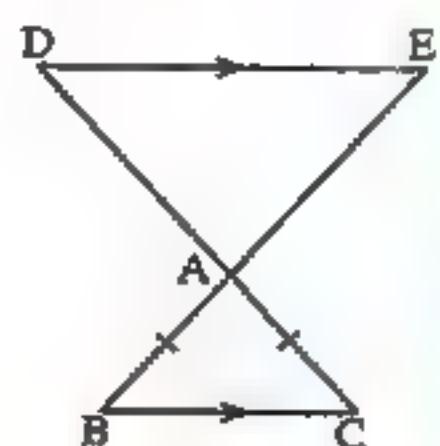
② $BE = EC$



[b] In the opposite figure :

$AB = AC$ and $\overline{DE} // \overline{BC}$

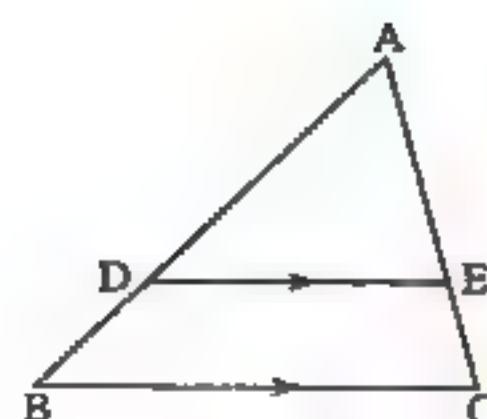
Prove that : $AD = AE$



5) [a] In the opposite figure :

$$AB > AC, \overline{DE} \parallel \overline{BC}$$

Prove that : $AD > AE$



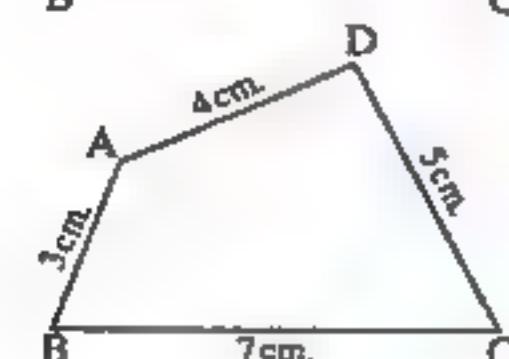
[b] In the opposite figure :

ABCD is a quadrilateral in which :

$$AB = 3 \text{ cm.}, BC = 7 \text{ cm.}$$

$$, CD = 5 \text{ cm. and } DA = 4 \text{ cm.}$$

Prove that : $m(\angle BAD) > m(\angle BCD)$



8 El-Kalyoubia Governorate

Al-Obour Educational Zone
Al-Rasels Language School



Answer the following questions :

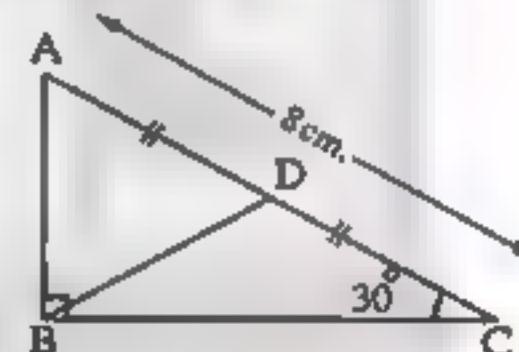
1) Complete the following :

(1) The bisector of the vertex angle of an isosceles triangle bisect the base and

(2) 3 cm. , 8 cm. and cm. are three sides of an isosceles triangle.

(3) In the opposite figure :

The perimeter of $\triangle ABD = \dots \text{ cm.}$



(4) The measure of the exterior angle of the equilateral triangle = °

(5) In $\triangle ABC$, $m(\angle A) = 100^\circ$, then the longest side is

2) Choose the correct answer :

(1) In $\triangle ABC$, if $m(\angle B) = 90^\circ$ and $m(\angle A) = 30^\circ$, then $BC = \dots$

(a) $\frac{1}{2} AC$ (b) $2 AC$ (c) $2 AB$ (d) $\frac{1}{2} AB$

(2) If A is the axis of symmetry of \overline{BC} , then $AB = \dots$

(a) XY (b) XZ (c) AC (d) BC

(3) The triangle whose side length are 2 cm. , $(X + 3) \text{ cm.}$ and 5 cm. becomes an isosceles triangle when $X = \dots \text{ cm.}$

(a) zero (b) 1 (c) 2 (d) 3

(4) The number of axis of symmetry of the equilateral triangle =

(a) zero (b) 1 (c) 2 (d) 3

Geometry

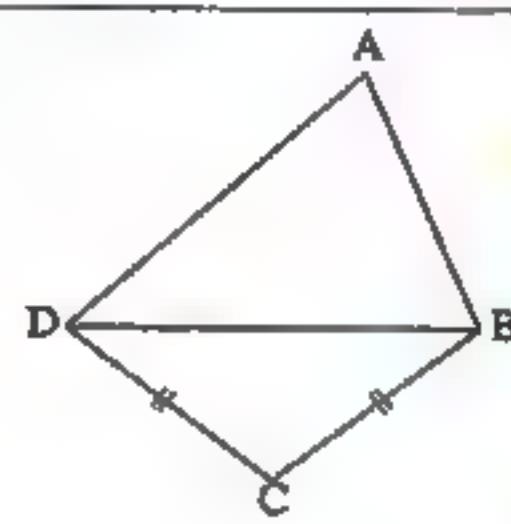
5) The sum of the lengths of any two sides in the triangle the length of the third side.

(a) $<$ (b) \leq (c) \geq (d) $>$ (e) $=$

3) [a] In the opposite figure :

ABCD is a quadrilateral in which $AD > AB$ and $BC = CD$

Prove that : $m(\angle ABC) > m(\angle ADC)$



[b] In the opposite figure :

$D \in \overline{BC}$, $E \in \overline{BC}$

, $\overline{AB} \parallel \overline{FD}$ and $\overline{AC} \parallel \overline{FE}$

, if $AB = AC$

Prove that : FDE is an isosceles triangle.



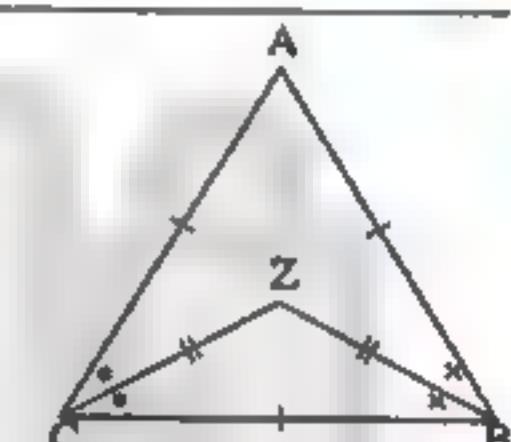
4) [a] In the opposite figure :

$\triangle ABC$ is an equilateral triangle

, \overrightarrow{BZ} bisects $\angle B$

, \overrightarrow{CZ} bisects $\angle C$

Find : The measure of the angles in triangle CZB



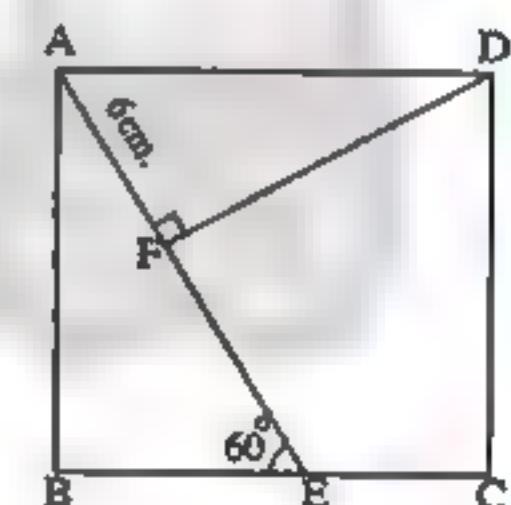
[b] In the opposite figure :

ABCD is a square

, $m(\angle AEB) = 60^\circ$

, $AF = 6 \text{ cm.}$, $\overline{DF} \perp \overline{AE}$

Find : The perimeter of the square ABCD



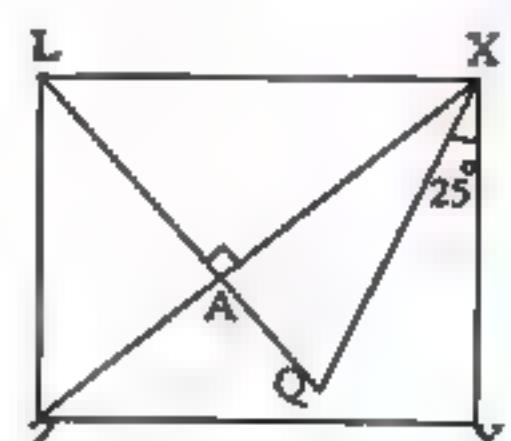
5) [a] In the opposite figure :

XYZL is a rectangle in which $m(\angle YXQ) = 25^\circ$

, $\overline{LQ} \perp \overline{XZ}$

, \overrightarrow{XQ} bisects angle YXZ

Prove that : $LQ = XL$.



[b] In $\triangle ABC$, $m(\angle A) = 40^\circ$, $m(\angle B) = 80^\circ$

Arrange the length of the sides of the triangle ABC in a descending order.

9

El-Monofia Governorate

Maths Supervision

*Answer the following questions :***[1] Complete :**

- ① The perpendicular which is drawn from vertex of an isosceles triangle to its base and
- ② The length of the median from the vertex of the right-angled triangle equals
- ③ In $\triangle ABC$, if $AB = AC$ and $m(\angle A) = 80^\circ$, then $m(\angle B) = \dots^\circ$
- ④ The measure of the exterior angle of the equilateral triangle = \dots°
- ⑤ In $\triangle DEF$, if $DE > DF$, then $m(\angle F) > \dots$

[2] Choose the correct answer :

- ① If the length of two sides in an isosceles triangle are 8 cm. and 4 cm., then the length of the third side is cm.

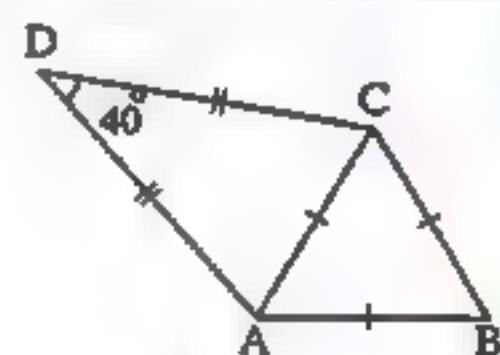
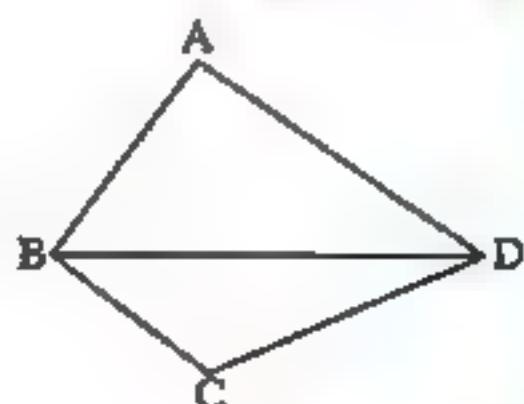
(a) 4	(b) 8	(c) 3	(d) 12
-------	-------	-------	--------
- ② The number of axes of symmetry in the isosceles triangle =

(a) 1	(b) 0	(c) 2	(d) 3
-------	-------	-------	-------
- ③ \overline{AD} is a median in $\triangle ABC$, M is the point of intersection of the medians, $MD = 2$ cm., then $AD = \dots$ cm.

(a) 2	(b) 4	(c) 6	(d) 8
-------	-------	-------	-------
- ④ $\triangle ABC$: $m(\angle B) = 125^\circ$, then the longest side of it is

(a) \overline{BC}	(b) \overline{AC}	(c) \overline{AB}	(d) its median
---------------------	---------------------	---------------------	----------------
- ⑤ In $\triangle XYZ$, if $m(\angle Y) = 90^\circ$, $m(\angle X) = 30^\circ$ and $XZ = 20$ cm., then $ZY = \dots$ cm.

(a) 12	(b) 6	(c) 24	(d) 10
--------	-------	--------	--------

[3] [a] In the opposite figure : $m(\angle D) = 40^\circ$, $DA = DC$ and $\triangle ABC$ is an equilateral triangleFind : $m(\angle DCB)$ **[b] In the opposite figure :** $AB < AD$ and $BC < CD$ Prove that : $m(\angle ABC) > m(\angle ADC)$ 

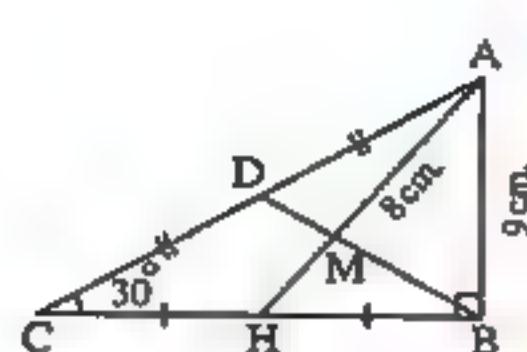
Geometry

4 [a] In the opposite figure :

D and H are the midpoints of \overline{AC} and \overline{CB} respectively

$m(\angle C) = 30^\circ$, $m(\angle B) = 90^\circ$, $AB = 9 \text{ cm.}$, $AM = 8 \text{ cm.}$

Find : The length of each of \overline{BD} , \overline{AH} and \overline{MD}



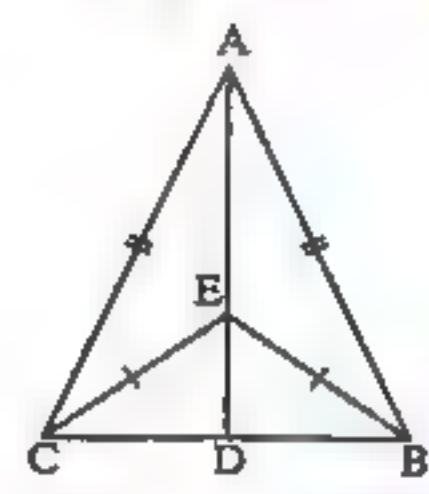
[b] In the opposite figure :

$AB = AC$ and $EB = EC$

Prove that :

① \overleftrightarrow{AE} is the axis of \overline{BC}

② $BD = CB$



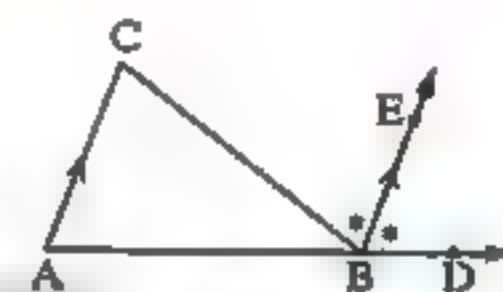
5 [a] In the opposite figure :

$D \in \overrightarrow{AB}$, \overrightarrow{BE} bisects $\angle CBD$

and $\overrightarrow{BE} \parallel \overrightarrow{AC}$

Prove that :

$\triangle ABC$ is an isosceles triangle,

[b] In $\triangle ABC$: $m(\angle A) = 40^\circ$ and $m(\angle B) = 80^\circ$

Arrange the lengths of the sides of the triangle ABC descendingly.



10 El-Dakahlia Governorate

Math's Supervision (L.E.S.)

Answer the following questions :

1 Complete :

- ① The number of axes of symmetry of isosceles triangle is
- ② The bisector of the vertex angle of the isosceles triangle
- ③ The medians of the triangle at one point.
- ④ The longest side of the right-angled triangle is the
- ⑤ In $\triangle ABC$, if $AB = AC$ and $m(\angle C) = 40^\circ$, then $m(\angle A) = \dots^\circ$

2 Choose the correct answer :

- ① Isosceles triangle whose side lengths are 4 cm. , $(X + 3) \text{ cm.}$ and 8 cm. , then $X = \dots$
 - (a) 4
 - (b) 5
 - (c) 3
 - (d) 8
- ② In $\triangle LMN$, if $m(\angle M) = 55^\circ$ and $m(\angle N) = 80^\circ$, then $LM \dots MN$
 - (a) <
 - (b) >
 - (c) =
 - (d) twice

(3) The measure of the exterior angle of the equilateral triangle =°
 (a) 30 (b) 60 (c) 90 (d) 120

(4) The base angles of the isosceles triangle are
 (a) alternating (b) corresponding (c) congruent (d) supplementary

(5) If \overline{AD} is a median of $\triangle ABC$ and M is the point of concurrence of the medians, then $MD = \dots AD$
 (a) $\frac{1}{3}$ (b) $\frac{2}{3}$ (c) $\frac{1}{2}$ (d) $\frac{1}{4}$

[3] [a] In the opposite figure :

$$m(\angle ABC) = m(\angle BDE) = 90^\circ$$

$$\therefore m(\angle E) = 30^\circ$$

, D is the midpoint of \overline{AC}

Prove that : $AC = BE$

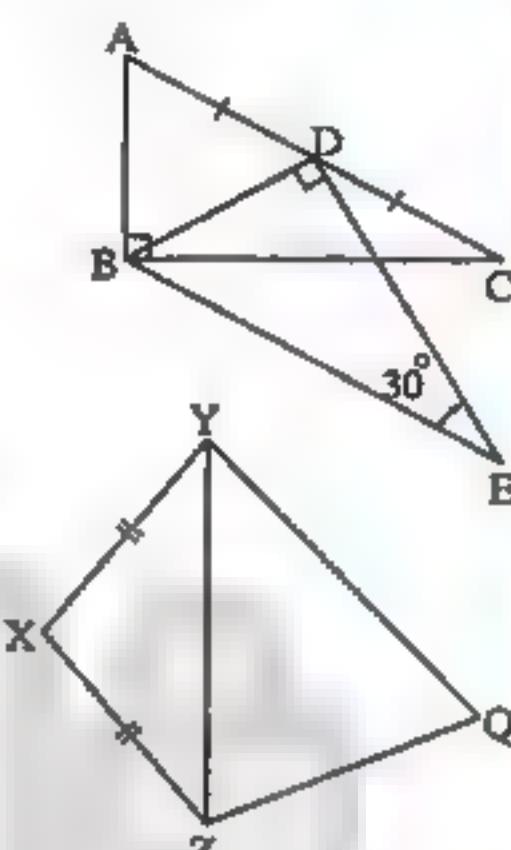
[b] In the opposite figure :

$$XY = XZ$$

$$\therefore QY > QZ$$

Prove that :

$$m(\angle XZQ) > m(\angle XYQ)$$



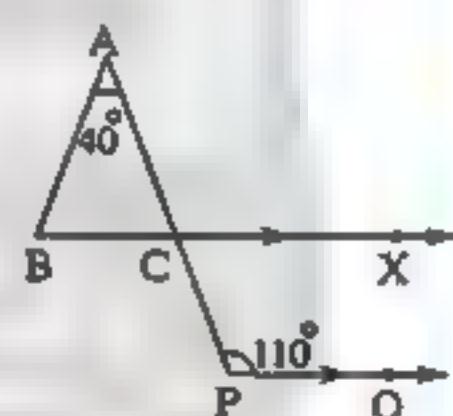
[4] [a] In the opposite figure :

$$X \in \overrightarrow{BC}, \overrightarrow{BC} \parallel \overrightarrow{PQ}$$

$$\therefore m(\angle P) = 110^\circ$$

$$\therefore m(\angle A) = 40^\circ$$

Prove that : $AB = AC$



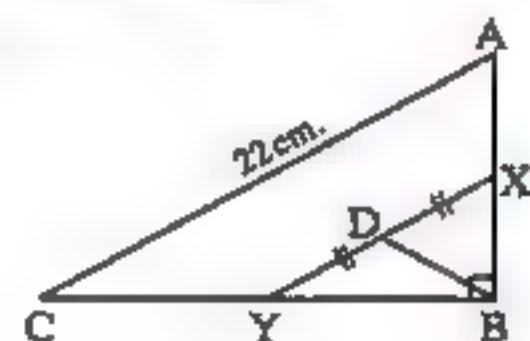
[b] In the opposite figure :

$$m(\angle ABC) = 90^\circ$$

X, Y, D are midpoints of \overline{AB} , \overline{BC} , \overline{XY} respectively.

$$AC = 22 \text{ cm.}$$

Find : BD

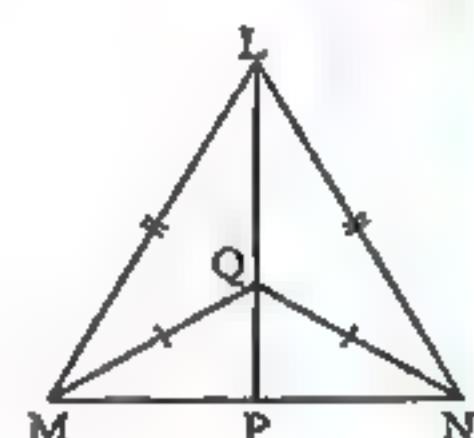


[5] [a] In the opposite figure :

$$LM = LN$$

$$\therefore QM = QN$$

Prove that : $MP = NP$



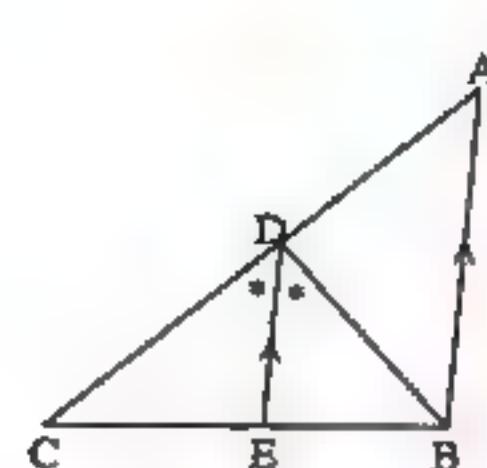
Geometry

[b] In the opposite figure :

\overline{DE} bisects $\angle BDC$ and $\overline{DE} \parallel \overline{AB}$

Prove that :

$AC > BC$



Ismailia Governorate

Directorate of Education
Directorate of Math's



Answer the following questions :

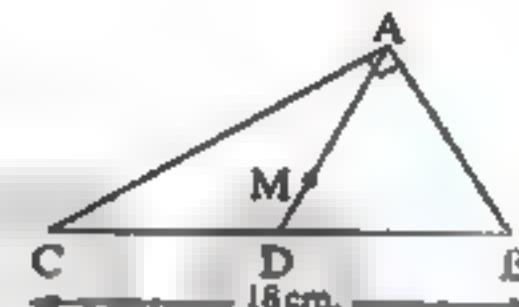
1 Choose the correct answer :

(1) In the opposite figure :

If $m(\angle A) = 90^\circ$, \overline{AD} is a median ,

M is the point of intersection of its medians
and $BC = 18 \text{ cm.}$, then $MA = \dots \text{ cm.}$

(a) 9 cm. (b) 3 cm. (c) 6 cm. (d) 18 cm.



(2) In $\triangle XYZ$, if $m(\angle Y) < m(\angle Z)$, then $XY \dots XZ$

(a) = (b) < (c) > (d) twice

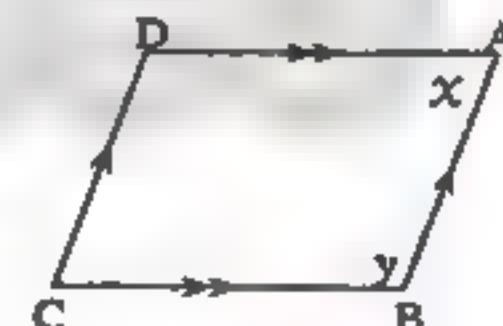
(3) If the measures of two angles of a triangle are 65° and 50° , then the triangle is

(a) scalene (d) equilateral (c) isosceles (d) right angled

(4) If ABCD is a parallelogram , $X : y = 1 : 2$

, then $m(\angle C) = \dots^\circ$

(a) 60° (b) 120°
(c) 180° (d) 360°



(5) If 10 cm. , 5 cm. and X cm. are side lengths of an isosceles triangle , then $X = \dots \text{ cm.}$

(a) 10 (b) 5 (c) 15 (d) 4

2 Complete :

① Number of axes of symmetry of an equilateral triangle =

② The perpendicular from the vertex angle of an isosceles triangle bisects each of

and

③ In $\triangle ABC$, if $AB = 3 \text{ cm.}$ and $BC = 5 \text{ cm.}$, then $AC \in]\dots, \dots[$

④ If $ABCD$ is a square , then $m(\angle ACB) = \dots \circ$

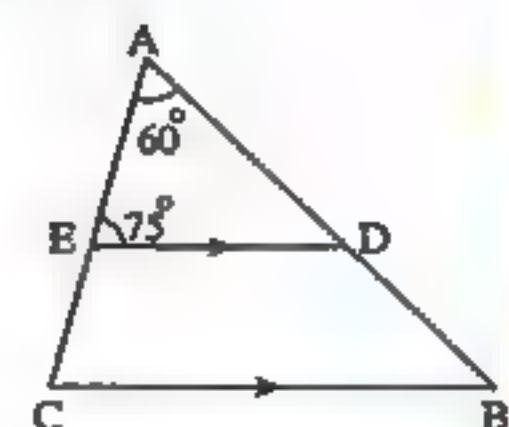
⑤ If $A \in L$ where L is the axis of symmetry of \overline{BC} , then $AB \dots AC$

③ [a] In the opposite figure :

$$\overline{ED} \parallel \overline{BC}$$

, $m(\angle A) = 60^\circ$ and $m(\angle AED) = 75^\circ$

Prove that : $AB > AC$



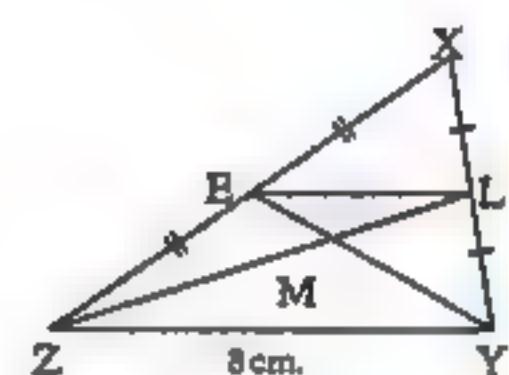
[b] In the opposite figure :

$\triangle XYZ$ in which : L and E are midpoints

of \overline{XY} and \overline{XZ} respectively.

$\overline{YE} \cap \overline{ZL} = \{M\}$, $YZ = 8 \text{ cm.}$, $YM = 4 \text{ cm.}$ and $ZL = 9 \text{ cm.}$

Find : The perimeter of $\triangle EML$.



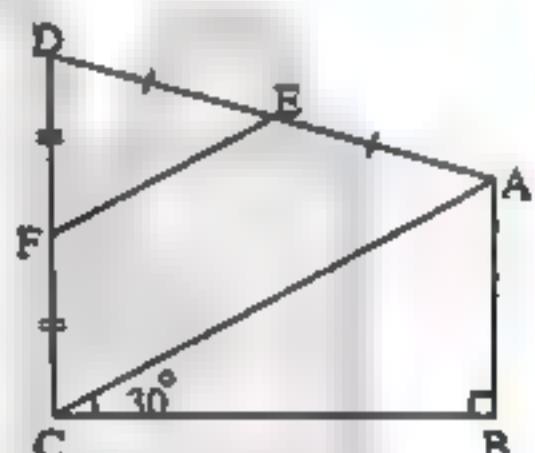
④ [a] In the opposite figure :

$m(\angle B) = 90^\circ$, $m(\angle ACB) = 30^\circ$

E is the midpoint of \overline{AD}

and F is the midpoint of \overline{CD}

Prove that : $AB = EF$

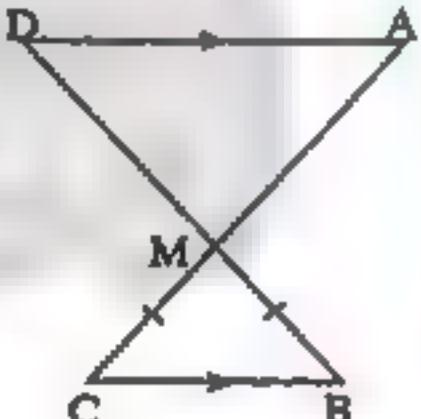


[b] In the opposite figure :

If $\overline{AC} \cap \overline{BD} = \{M\}$

, $\overline{AD} \parallel \overline{BC}$ and $MB = MC$

Prove that : $\triangle MAD$ is an isosceles.



⑤ [a] In $\triangle ABC$: If $m(\angle A) = 50^\circ$ and $m(\angle B) = 85^\circ$

Find : $m(\angle C)$, then arrange the lengths of its sides ascendingly.

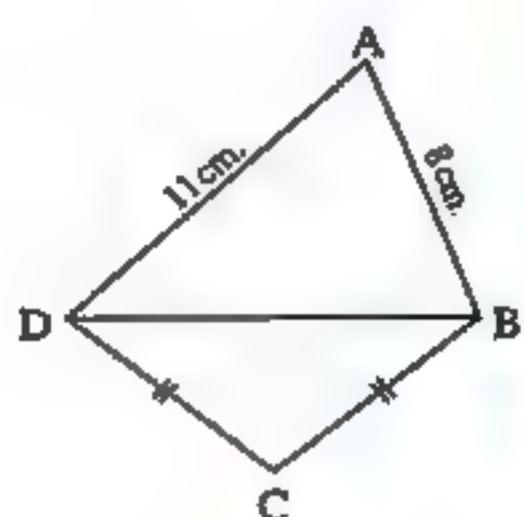
[b] In the opposite figure :

$ABCD$ is a quadrilateral

, $AD = 11 \text{ cm.}$, $AB = 8 \text{ cm.}$

and $CB = CD$

Prove that : $m(\angle ABC) > m(\angle ADC)$





Answer the following questions :

[1] Choose the correct answer :

- (1) In $\triangle ABC$: $m(\angle B) = 80^\circ$ and $m(\angle C) = 50^\circ$, then $AB = \dots \dots \dots$
 - (a) BC
 - (b) AC
 - (c) $2 AC$
 - (d) $\frac{1}{2} BC$
- (2) The lengths 6 cm. , 7 cm. and can be lengths of the sides of a triangle.
 - (a) 15 cm.
 - (b) 13 cm.
 - (c) 18 cm.
 - (d) 11 cm.
- (3) In $\triangle ABC$, if $m(\angle A) = 30^\circ$ and $m(\angle B) = 90^\circ$, then $AC = \dots \dots \dots$
 - (a) $\frac{1}{2} BC$
 - (b) $2 BC$
 - (c) $2 AB$
 - (d) BC
- (4) The point of intersection of the medians of the triangle divides each of them with ratio from the vertex.
 - (a) $1 : 2$
 - (b) $3 : 1$
 - (c) $2 : 1$
 - (d) $1 : 3$
- (5) In $\triangle ABC$, $m(\angle A) = 50^\circ$ and $m(\angle B) = 100^\circ$ then
 - (a) $AB > AC$
 - (b) $AC < AB$
 - (c) $BC < AC$
 - (d) $AB = BC$

[2] Complete :

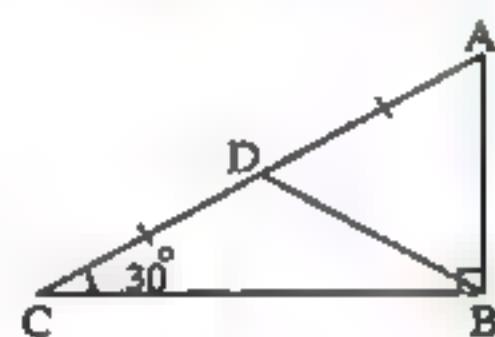
- (1) The measure of exterior angle of the equilateral triangle = °
- (2) If $\triangle ABC \cong \triangle XYZ$, then $\angle A \cong \dots \dots \dots$
- (3) The longest side in a right-angled triangle is
- (4) If \overleftrightarrow{XY} is an axis of symmetry of \overline{AB} , $D \in \overleftrightarrow{XY}$, then $AD = \dots \dots \dots$
- (5) Square with side length 5 cm. , then its area = cm^2

[3] [a] In the opposite figure :

D is a midpoint of \overline{AC}

, $m(\angle B) = 90^\circ$, $m(\angle ACB) = 30^\circ$

Prove that : $\triangle ABD$ is an equilateral triangle

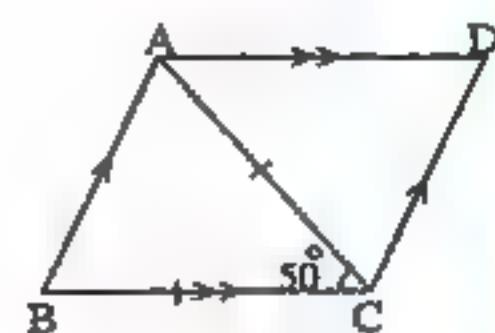


[b] In the opposite figure :

$ABCD$ is a parallelogram

, $CA = CB$ and $m(\angle ACB) = 50^\circ$

Find with proof : $m(\angle D)$

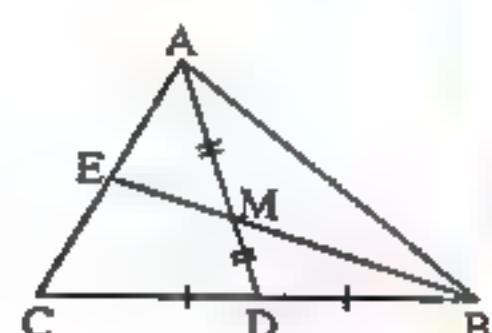


4 [a] In the opposite figure :

E and D are the midpoints of \overline{AC} and \overline{CB} respectively

If $AD = 4.5$ cm and $BM = 4$ cm.

Find : The length of each of \overline{MD} and \overline{BE}



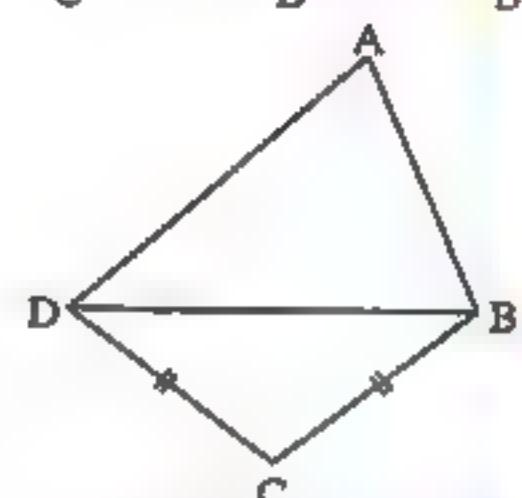
[b] In the opposite figure :

ABCD is a quadrilateral in which : $AD > AB$

and $BC = CD$

Prove that :

$m(\angle ABC) > m(\angle ADC)$



5 [a] ABC is a triangle in which : $m(\angle A) = 40^\circ$ and $m(\angle B) = 75^\circ$

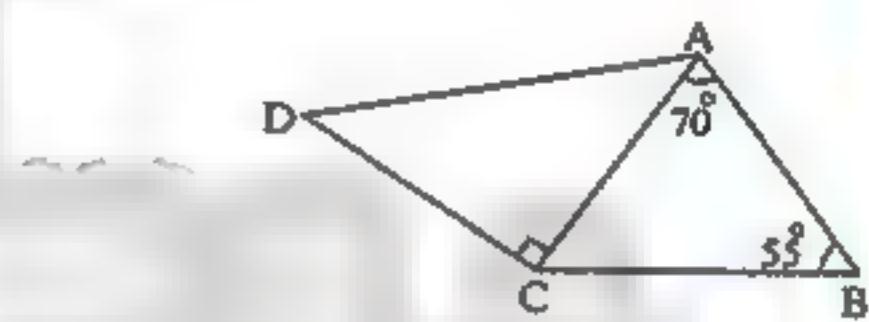
Arrange the lengths of sides of $\triangle ABC$ in ascending order.

[b] In the opposite figure :

$m(\angle BAC) = 70^\circ$, $m(\angle B) = 55^\circ$

and $m(\angle ACD) = 90^\circ$

Prove that : $AD > AB$



13 El-Behira Governorate

Maths Inspection



Answer the following questions :

1 Complete the following :

- (1) If the length of two sides of isosceles triangle are 8 cm. and 4 cm. , then the length of the third side is
- (2) The number of axis of symmetry of scalene triangle is
- (3) The length of the median of the right-angled triangle from the vertex of right angle equals the length of the hypotenuse.
- (4) The base angles of the isosceles triangle are in measure.
- (5) In $\triangle ABC$, if $m(\angle A) = 40^\circ$ and $m(\angle B) = 60^\circ$, then the longest side is

2 Choose the correct answer :

- (1) If A lies on the line of symmetry of \overline{BC} then $AB \dots AC$
 - (a) >
 - (b) <
 - (c) =
 - (d) //
- (2) The measure of the exterior angle of the equilateral triangle =
 - (a) 90°
 - (b) 60°
 - (c) 120°
 - (d) 180°
- (3) In $\triangle ABC$, if $BC > AC$, then $m(\angle A) \dots m(\angle B)$
 - (a) >
 - (b) <
 - (c) =
 - (d) \geq

Geometry

④ If $\triangle ABC$ is a right-angled triangle at B and $m(\angle C) = 30^\circ$, then $AB = \dots \cdot AC$

(a) 2 (b) $\frac{1}{2}$ (c) $\frac{1}{3}$ (d) 3

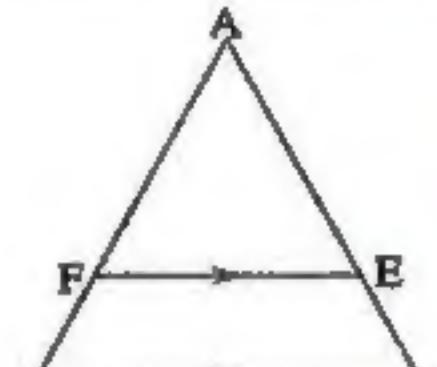
⑤ The sum of lengths of two sides of a triangle is the length of the third side.

(a) greater than (b) less than (c) equal (d) greater than or equal

③ [a] In the opposite figure :

$$AB = AC, \overline{EF} \parallel \overline{CB}$$

Prove that : $AE = AF$



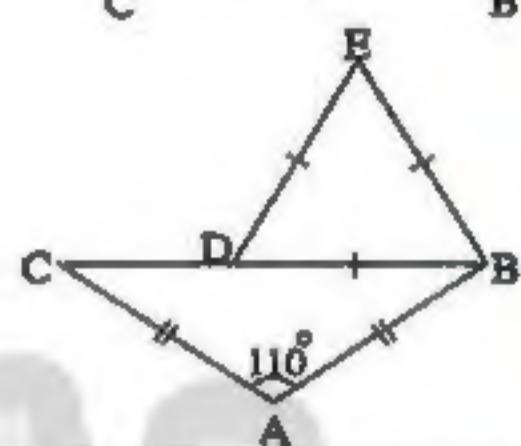
[b] In the opposite figure :

$$EB = ED = DB$$

$$, AB = AC$$

$$\text{and } m(\angle A) = 110^\circ$$

Find : $m(\angle ABE)$



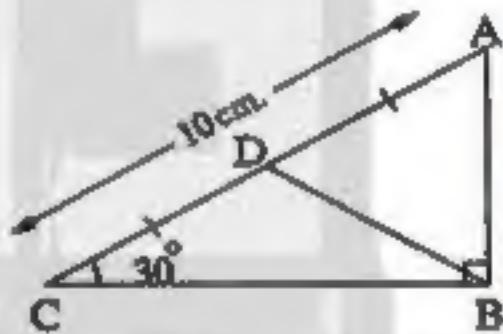
④ [a] In $\triangle ABC$, if $m(\angle A) = 50^\circ$ and $m(\angle B) = 60^\circ$

Arrange the side lengths of $\triangle ABC$ ascendingly.

[b] In the opposite figure :

$$m(\angle ABC) = 90^\circ, m(\angle C) = 30^\circ, AD = DC \text{ and } AC = 10 \text{ cm.}$$

Find : The perimeter of $\triangle ABD$



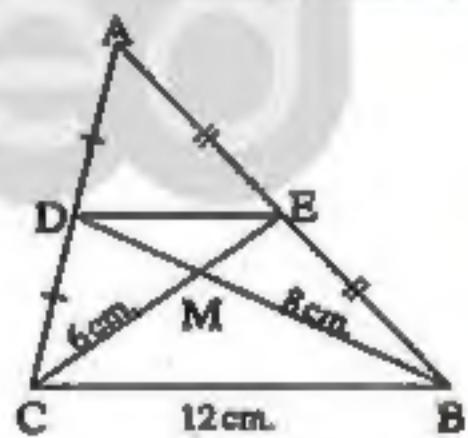
⑤ In the opposite figure :

$$AE = EB, AD = DC$$

$$, MB = 8 \text{ cm.}, MC = 6 \text{ cm.}$$

$$\text{and } BC = 12$$

Find : The perimeter of $\triangle MED$



14

El-Minia Governorate

El-Minia Directorate of Education
Governmental languages schools

Answer the following questions :

① Complete the following : (Calculator is allowed)

① The number of axes of symmetry in the equilateral triangle equals

② If the length of two sides in a triangle are 2 cm. and 7 cm.

, then $<$ length of third side $<$

146

③ The length of median which drawn from the vertex of the right-angle in the right-angled triangle equals

④ If the measure of an angle in an isosceles triangle is 60° , then the triangle is

⑤ The length of the side opposite to the angle of measure 30° in the right-angled triangle equals

[2] Choose the correct answer :

① XYZ is a triangle in which : $m(\angle Z) = 70^\circ$ and $m(\angle Y) = 60^\circ$ then $YZ \dots \dots \dots XY$
 (a) $>$ (b) $<$ (c) $=$ (d) twice

② The numbers which can be lengths of sides of triangle are

(a) 0 , 3 , 5 (b) 3 , 3 , 5 (c) 3 , 3 , 6 (d) 3 , 3 , 7

③ The measure of the exterior angle of the equilateral triangle equals

(a) 60 (b) 30 (c) 100 (d) 120

④ If the length of two sides in an isosceles triangle are 8 cm. and 4 cm. , then the length of the third side is

(a) 4 (b) 8 (c) 3 (d) 12

⑤ If $\triangle ABC$ is a right-angled at B , $AB = 6$ cm. and $BC = 8$ cm. , then the length of the median drawn from B is

(a) 10 (b) 8 (c) 6 (d) 5

[3] [a] In $\triangle ABC$, $AB = 7$ cm. , $BC = 5$ cm. and $AC = 6$ cm.

Arrange its angles measures ascendingly.

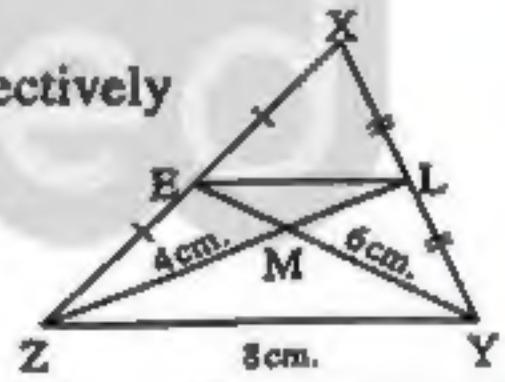
[b] In the opposite figure :

$\triangle XYZ$ in which : L and E are the midpoints of \overline{XY} and \overline{XZ} respectively

$, \overline{YE} \cap \overline{ZL} = \{M\}$

$, YZ = 8$ cm. , $YM = 6$ cm. , $ZM = 4$ cm.

Find : The perimeter of $\triangle MLE$



[4] [a] In the opposite figure :

$AB < AD , BC < CD$

Prove that : $m(\angle ABC) > m(\angle ADC)$

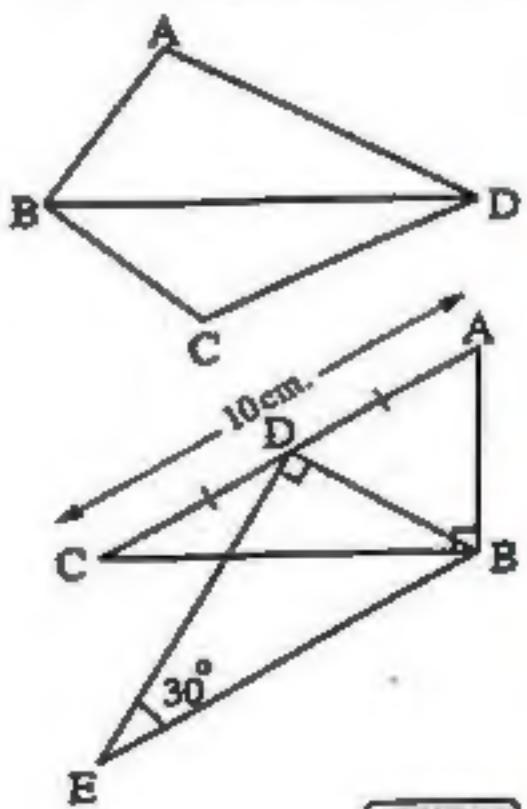
[b] In the opposite figure :

$m(\angle ABC) = m(\angle BDE) = 90^\circ$

$, D$ is the midpoint of \overline{AC}

$, m(\angle E) = 30^\circ$ and $AC = 10$ cm.

Find : The length of \overline{BE}



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هذا العمل خاص بموقع ذاكرولي التعليمي ولا يسمح بتداوله على مواقع أخرى

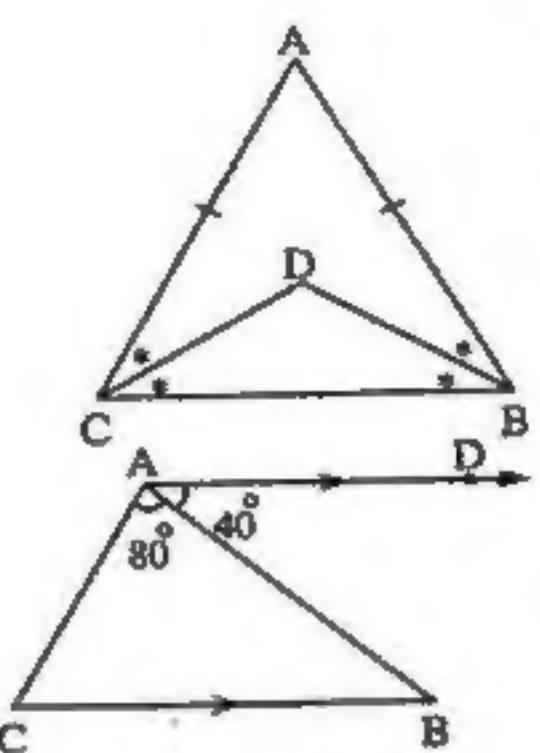
Geometry

5 [a] In the opposite figure :

$AB = AC$, \overrightarrow{BD} bisects $\angle B$

and \overrightarrow{CD} bisects $\angle C$

Prove that : $\triangle DBC$ is an isosceles triangle.



[b] In the opposite figure :

$\triangle ABC$ in which : $\overrightarrow{AD} \parallel \overrightarrow{CB}$

, $m(\angle DAB) = 40^\circ$ and $m(\angle BAC) = 80^\circ$

Prove that : $AB > AC$

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Educational Directorate
Tur Sinai Educational Zone



Answer the following questions :

1 Choose the correct answer from given answers :

① In isosceles triangle the base angles are

(a) complementary. (b) supplementary. (c) adjacent. (d) congruent.

② The sum of the lengths of the two sides of the triangle the length of the third side.

(a) double (b) equals (c) greater than (d) less than

③ In the opposite figure :

If $AB = 12$ cm.

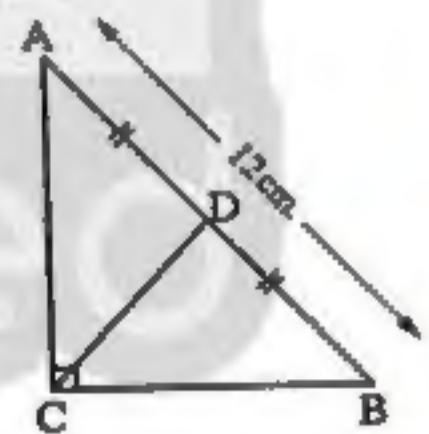
, then $CD = \dots$ cm.

(a) 12

(b) 9

(c) 6

(d) 3



④ The triangle that has one axis of symmetry is triangle.

(a) an equilateral (b) an isosceles (c) a scalene (d) a right-angled

⑤ The is a parallelogram where one of its angles is right angle.

(a) a rectangle (b) a square (c) a rhombus (d) a trapezium

2 Complete the following :

① The point that divides the median of the triangle in the ratio $1 : 2$ from the base is the point of intersection of

② In $\triangle ABC$, if $AB > BC$, then $m(\angle A) < m(\angle \dots)$

③ The sum of the measures of accumulative angles at point is°

④ ABC is a triangle in which : $m(\angle B) = 130^\circ$, then the longest side of its sides is

⑤ In the right-angled triangle , the length of the side that opposite to the angle of measure 30° = the length of the hypotenuse.

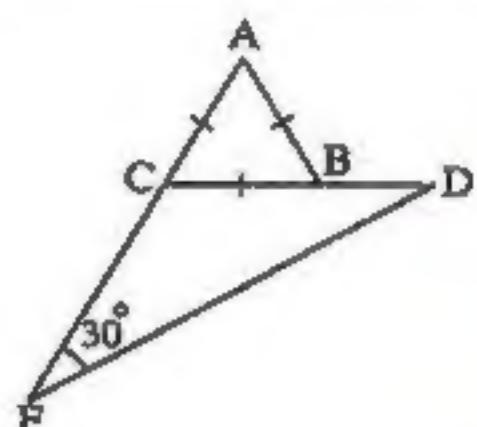
③ [a] In the opposite figure :

ABC is an equilateral triangle

, $F \in \overline{AC}$, $D \in \overline{CB}$

, $m(\angle DFC) = 30^\circ$

Prove that : $\triangle DCF$ is an isosceles triangle.



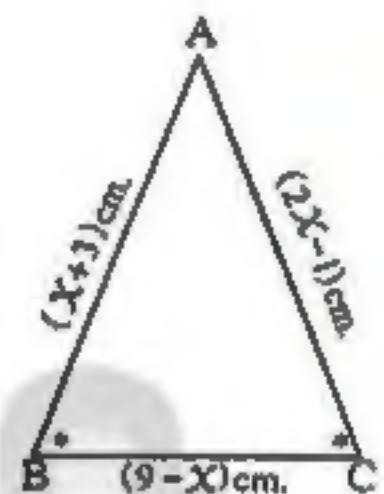
[b] In the opposite figure :

ABC is a triangle in which :

$m(\angle B) = m(\angle C)$

Find :

The perimeter of $\triangle ABC$

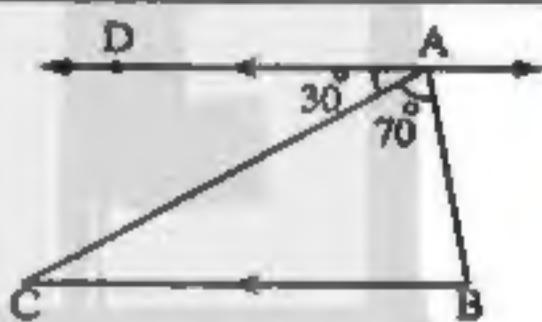


④ [a] In the opposite figure :

$\overleftrightarrow{AD} \parallel \overleftrightarrow{BC}$, $m(\angle BAC) = 70^\circ$

and $m(\angle DAC) = 30^\circ$

Prove that : $AC > BC$



[b] ABC is a triangle in which : $AB = 7$ cm. , $BC = 5$ cm. and $AC = 6$ cm.

Arrange the measures of its angles in an ascending order.

⑤ [a] In the opposite figure :

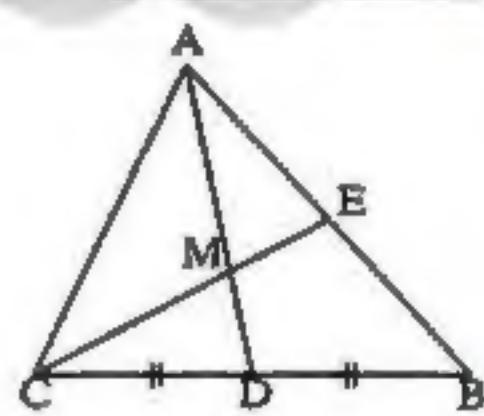
ABC is a triangle

, D is the midpoint of \overline{BC} , $M \in \overline{AD}$

, where $AM = 2 MD$

Draw \overleftrightarrow{CM} cuts \overleftrightarrow{AB} at E , if $EC = 12$ cm.

, find : The length of \overline{EM}



[b] In the opposite figure :

$BA = BC$

and \overleftrightarrow{BE} bisects $\angle CBD$

Prove that : $\overleftrightarrow{BE} \parallel \overleftrightarrow{AC}$

